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AUTHOR	Matthew, Kathy, Ed.
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ABSTRACT

This document contains the following papers on reading, language arts, and literacy from the SITE (Society for Information Technology & Teacher Education) 2002 conference: "PT3 Facilitates Technology Use in Preservice Teacher Reading Courses" (Dana Arrowood and Michele Maldonado); "PT3 Technology Enhanced Lesson Plans for the Elementary School" (Mary Kay Bacallao, Candace Lacey, Joseph Furner, Tom W. Frederick); "Teaching Teachers How To Reach the Reluctant Reader through Multimedia" (Lawrence Baines and Peggie Price); "Can Preservice Teacher Education Really Help Me Grow as a Literacy Teacher?" (Elizabeth A. Baker); "Training the Trainers: Technology for District ESOL Specialists" (Cathy Cavanaugh and Terry Cavanaugh); "A Distance Education ESL Endorsement Program" (Nedra A. Crow, Joan P. Sebastian, Peter Serdyukov); "Literature, Differentiated Instruction, and the Internet" (Gail Hymel Dack and others); "Teacher Education for Mother Tongue Teaching and Learning Using Information and Communication Technologies" (Mabel Encinas S.); "Giving a 'Hand' to the Writing Workshop with PDAs" (Candace Figg and Jenny Burson); "Evaluation of an Instructors' Training Programme from the Instructors' Point of View" (Hara Gioroglou); "Electronic Writing and Workplace Literacy" (Heather Hemming and others); "CoBaLTT! Content-Based Language Teaching through Technology" (Marlene Johnshoy); "Preservice Teachers' Use of WebQuest To Construct Literacy Events" (Kimberly Kimbell-Lopez); "Beyond Word Processing" (MaryAnn Kolloff and others); "Integrating Technology into Reading Instruction" (Leping Liu); "The Sky IS Falling: Language Arts Methods, Technology, and a Cleveland School Facilities Crisis" (Kristien Marquez-Zemkov and James Harmon); "Mapping the Boundaries of Literacy and Literacy Education in Cyberspace: Four Preliminary Markers" (Barbara O'Byrne, Noel Bowling, Patrick Iannone, Tom Caron); "Using Technology To Address Demographic Change and To Integrate Meaningful Assessment in a Writing Program" (Rosemary K.O'Dounoghue); "The 3D Term Paper" (Carl L. Reynolds and Christine D. Reynolds); "Lessons Learned: Twelve Years of Actively Integrating Technology into the Teacher Education Program" (Susan Ramp Ridout, Carl deGraaf, Jane E. Riehl); "The Lektor System for the Creation and Reading of Electronic Books" (Jose L. Rodriguez Illera);

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"Developing EFL Collaborative and Communicative Writing Skills on the Web" (Janete Sander Costa, Silvana Zardo Pacheco, Dra. Cleci Maraschin); "Write To Learn with Journal Zone" (Peter Skillen); "Literacy Junction: Exploring Adolescent Identity and Social Agency on the Web" (Hiller A. Spires and Pru Cuper); "Assessing the Process and Efficacy of Moving Literacy Education Classes Online" (Matt Thomas); "Knowledge Building Technology and Literacy Learning in Canada's North" (Elizabeth Tumblin and Heather Hemming); and "A Great Inspiration" (Kathy L. Adams and Marguerite Veres). Several brief summaries of conference presentations are also included. Most papers contain references. (MES)

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Reading, Language Arts and Literacy (SITE 2002 Section)

Kathy Matthew. Ed.

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SECTION EDITOR:
Kathy Matthew, Louisiana Tech University

Using technology to teach reading and writing is exciting, challenging, and rewarding. Discovering and learning to use new pieces of technology and new software programs is an ongoing endeavor. Even more challenging is creating software to meet students' needs. Exploring ways to use technology to effectively enhance literacy instruction is also time consuming. Undaunted by these challenges the authors of these papers share the ways they use technology in their teaching. Papers include discussions of methods courses developed for preservice teachers, ways to use the Internet in methods courses, how to integrate technology in English as a second language instruction and English as a foreign language instruction, and ideas for using technology to teach writing.

Liu's paper describes the development and implementation of a course designed to prepare students to teach reading using technology. Students learn to use a variety of technologies, to evaluate software packages, to examine web resources, and to design reading instruction that incorporate appropriate technologies and software. Baker writes about her experiences using case-based instruction and field experiences in a block of literacy courses. Students perceive that these activities help them grow as literacy teachers.

Language arts teacher candidates working with Marquez-Zenkov and Hamon participated in a unique methods course centered on the proposed renovations of public schools in their area. Students combined technology and language arts as they interviewed constituents, researched the topic, and wrote reports using a course web site for online peer editing. An introduction to WebQuests was included in the course. Teacher candidates in Kimbell-Lopez's reading methods class developed WebQuests. Her students discovered that imbedded within their WebQuests were a number of reading/language arts processes. Students in these methods classes learned how to incorporate authentic learning opportunities into their classroom teaching.

Several papers in this section provide descriptions of ways to combine technology and writing. O'Donoghue writes about critical issues involved in the integration of technology in writing programs and offers ideas for addressing these issues. Skillen's article describes *Journal Zone* an online environment that includes journal writing, collaboration, and cognitive scaffolding. Costa and Maraschin describe how students in an English as a foreign language class are using *EquaText*, a web-based collaborative writing tool.

Marquez-Chisholm combines Multiple Intelligences Theory, the language objectives from the ESL Standards for PreK-12 Students, and technology. This interactive session will allow participants to experience a multi-disciplinary lesson. Illera's interactive session will demonstrate how to use *Lektor* for creating and reading electronic books. *Nexos*, a language portal for cultural learning and collaboration for teachers and learners of Spanish, will be presented by Hellebrandt during an interactive session.

This is a brief introduction to the many interesting papers included in this section. They describe challenging projects and discuss intriguing topics related to reading, language arts, literacy, and foreign language learning. These papers challenge readers to critically examine them, to discover new ideas to use in their own classrooms, and to contact the authors for additional information.

PT3 Facilitates Technology Use in Preservice Teacher Reading Courses

Dana Arrowood
Institute for the Integration of Technology into Teaching and Learning
University of North Texas
United States
arrowood@coefs.coe.unt.edu

Michele Maldonado
Institute for the Integration of Technology into Teaching and Learning
University of North Texas
United States
mlm0012@coefs.coe.unt.edu

Abstract: Two doctoral candidates majoring in reading education at the University of North Texas developed technology related literacy activities for their preservice reading education courses. These activities were designed to show the place technology has in the language arts curriculum by facilitating the acquisition of literacy skills related to reading and writing. The response of the preservice teachers to the activities featuring technology integration was overwhelmingly positive. Through funding from PT3 grants, new activities are being developed to complement coursework and preservice teachers are being introduced to new technologies as they become available.

Many new and exciting opportunities for teaching reading and writing skills exist for teachers who integrate technology into their language arts curriculum. Preservice teachers at the University of North Texas were able to experience technology integration into language arts methods courses through the efforts of two teaching fellows.

Teaching Reading K-12 is an introductory reading course that is required of all students in the college of education at the University of North Texas. It covers a variety of topics that include knowledge of the reading process, stages of reading and writing development, techniques for teaching reading skills, and an overview of reading assessment. It is a prerequisite of the second course, Assessment in Reading. Assessment of Reading is required for all preservice teachers specializing in elementary education. This course is designed to teach students how to perform reading assessments and provide remedial recommendations for elementary grade students. These preservice teachers assess and tutor children each week.

During the first week of courses, instructions were given to the preservice teachers enrolled in both courses describing how to obtain a free email account provided for all students by the university. Email addresses were collected; a list was created, and then given to the members of each class.

The preservice teachers enrolled in Teaching Reading K-12 met in a computer classroom on February 2. Small groups of students who were not yet comfortable searching the World Wide Web were lead by a peer who was experienced in web searches. After a brief demonstration, the preservice teachers were asked to find resources related to Ground Hog Day and Valentine's Day that could be used in teaching language arts. The class later met in the computer education classroom to learn how to make word puzzles (see http://puzzlemaker.school.discovery.com/). The students were assigned vocabulary words from their textbook and asked to bring short definitions to class in order to be ready to create puzzles. After they finished constructing the puzzles, the instructor made copies for all the students to help them learn the required vocabulary for the course.

PowerPoint presentations were used in both courses to highlight important points in textbook chapters and lectures. The preservice teachers were first attracted by its bright colors and with the ease of which they could see the presentations projected onto the screen by the LCD panel. The students soon began to appreciate other features of PowerPoint, most notably the handouts that could be easily produced for their use. Their comments included, "It saves time in class in not having to write everything" and that it facilitated class discussion because they did not have to concentrate on taking notes. After being viewed in class, the presentations were posted on the course website in HTML and downloadable format for future reference.

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Teaching Reading K-12 again met in the computer classroom. They were divided into small groups and taught how to create their own PowerPoint presentations. Each group was given a section of a chapter in their textbook, and in a collaborative effort, the group members designed their own slide show presentations and presented them to their classmates. The students found this activity "helpful" and some felt that they became "more familiar with the chapter."

The preservice teachers were asked at the end of the semester how they might use PowerPoint in their future classrooms. Their ideas covered a broader scope of uses than those they had seen modeled in the reading courses. The ideas given could be divided into two types, those for teacher use and those for children's use. Among the suggestions for teacher use were presentations covering dental care, fire safety, stranger-danger, and other topics that are routinely taught in elementary school classrooms. One student felt that PowerPoint presentations would be useful when used in conjunction with content area textbooks that often prove difficult for beginning readers. Another strength mentioned was its ability to "stimulate visual learners."

The majority of the preservice teachers could foresee uses for PowerPoint as a tool in the hands of their future students. Several believed that PowerPoint should be made available in the writing center in the classroom. Book reports and other types of information gathered by students could be presented to their peers via slide show presentations. Since PowerPoint is user friendly, they felt that even young children could create presentations and would enjoy illustrating their work with graphics. One preservice teacher elaborated on this activity by stating, "Filling up a PowerPoint (and adding pictures) would be less intimidating than having to fill an 8 ½ x 11 page" for a young child.

An email exchange between the preservice teachers in Teaching Reading K-12 and those in Assessment in Reading was planned by the instructors as a way to demonstrate to their students the value of classroom communication with those who have knowledge that is beneficial in some way and how having e-pals could be a way to motivate children to refine their reading and writing skills. Reading assessment was the last major topic covered in Teaching Reading K-12 and the timing of the email exchange was planned to correspond with that topic.

The majority of the preservice teachers in Teaching Reading K-12 were curious to learn how the content they were learning was applied in a real teaching situation. Since most of the preservice teachers in Teaching Reading K-12 would be required to take Assessment in Reading, they considered the email exchange an opportunity to learn more about the course and its requirements. The instructors monitored the exchange by requiring each email to be carbon copied to them in order for the students to receive participation points.

Comments by the preservice teachers provided positive feedback on the e-pal exchange. The students in Teaching Reading K-12 gave the following responses: "It was neat to be able to talk with people who are further along than I am in their degree plan. It made me look forward to Assessment in Reading", "It was good because it helped tie in what we are learning now to real life as the Assessment in Reading students are experiencing it," and "It was great! It should have been done throughout the whole year."

Preservice teachers in the Assessment of Reading course found themselves in the role of teacher as is illustrated by the following comments, "This was a good experience for me. We tend to learn better when we have to explain to someone else answers to questions. It provided a way to reflect on our own learning about assessment this semester," "I really liked the email discussions. I found it useful to review the information discussed in class. I think it would be good to have the email discussions throughout the entire semester," and "I thought that the E-mail exchange was fun - because I got to play 'the teacher'. It forced me to think broadly about concepts in child development and literacy."

After the email exchange between the two courses was completed, the students were asked to comment on how they might use an email exchange in their future classes. The comments included "I would use this to have young students talk about a certain book", "I think children of all ages would like to email kids from other schools, states, or countries and learn about each other and where they are from."

The university received a PT3 grant and the instructor received a laptop for use in integrating technology into her reading course. A listserv is used each semester to keep the preservice teachers in close contact as they assess and tutor children. It promotes the exchange ideas and allows the preservice teachers to provide support for each other between class meetings. Funding from PT3 was used to purchase digital cameras for preservice teacher use and this new technology resulted in an assignment change. Previously, students had used PowerPoint for presenting chapters in textbook or article summaries. Now they are able to give presentations that feature the highlights of their tutoring sessions and are able to include pictures of projects their students have completed as well as pictures of themselves working with their students. This has become a favorite show and tell activity at end of each semester.

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PT3 Technology Enhanced Lesson Plans for the Elementary School

Mary Kay Bacallao, Ed. D.
St. Thomas University
16400 NW 32nd Avenue
Miami, Florida 33054 U.S.A
mbacalla@stu.edu

Candace Lacey, Ph. D.
Barry University
Miami Shores, Florida, U.S.A.
clacey@mail.barry.edu

Joseph Furner, Ph. D.
Florida Atlantic University
Boca Raton, Florida, U.S.A.
jfurner@fau.edu

Tom W. Frederick, Ed. D.
Golden Glades Elementary
Miami, Florida, U.S.A
tomwfred@yahoo.com

Abstract: The concept of virtual teams is relatively new. However, a virtual team, like any other team, progress through various stages of development and is dependent upon the clarity with which performance outcomes and goals are communicated for achieving success. This presentation focuses on the analysis of the transcripts of on-line meetings of a PT3 virtual team composed of subject area team leaders and project administrators. The lessons learned from this experience helped develop an understanding of the role that clear communication and trust play in building bridges across the digital divide. Lessons from practice will include Internet Field Trips.

The St. Thomas University Plan to Bridge the Digital Divide in South Florida

A consortium of schools with St. Thomas University in Miami, Florida as the lead partner was awarded a PT3 Capacity Building grant during the first year of the PT3 program. The teacher education program at St. Thomas University serves students of many ethnic groups. It is located in an urban area with a large African American population along with immigrants from many Hispanic countries and the Caribbean.

The purpose of the initial grant was to work with area elementary schools, such as Welleby Elementary, to train the pre-service teachers at St. Thomas University and Trinity International University to use computers effectively in classroom instruction and

thereby impact the diverse students in Miami-Dade County. The grant sought to train teachers who will not only teach in the inner city schools but stay in the inner city schools. By serving pre-service teachers who represent these underserved populations, the program sought to impact inner city classroom instruction.

What Has This Program Accomplished?

All of the program objectives were met in the first year and a three-year PT3 Implementation Grant was awarded the following year with more partners, including Florida Gulf Coast University and Golden Glades Elementary. The purpose of the Implementation grant changed the focus from the pre-service teachers to a team of professors, pre-service teachers, and K-6 teachers. It became apparent that, in order to effect systemic change, it was essential to train the professors. It was also essential that practicing K-6 teachers become an integral part of the process. Golden Glades Elementary, located several blocks from St. Thomas University, is a school with a student population that is completely either African American or Black American from the Caribbean. Florida Gulf Coast University is the newest Florida State University located on the West Coast of Florida and equipped with the latest technology in each college classroom.

How Did the Virtual Teams Work Together?

Subject area teams of professors, pre-service teachers, and K-6 teachers were formed. The teams focused on Math, Science, Reading/Language Arts, Social Studies, Exceptional Student Education, Curriculum, General Methods, and English as a Second Language. The focus on ESOL is important in Miami-Dade County because all teachers who are hired must also be certified to teach ESOL because of the large number of immigrant children attending school in Miami-Dade County.

During the first year, each team communicated on-line weekly. They met to discuss both successes and failures in their attempts to integrate technology into their classes. They also completed 50 hours of professional development in technology. In the second year, they worked together as a team to write and field test technology integrated lessons. It was determined that the convergence of learning that takes place in the classroom can be written in detail through lesson planning. The professors and pre-service teachers would begin their attempts to integrate technology into the curriculum with written lesson plans. With assistance from a new partner, BEACON, which hosts an on-line database of lessons, from Bay County, Florida, the professors and pre-service teachers worked together to write lessons that are field tested in the K-6 teacher's classrooms. In this process of working together, the professors and pre-service teachers learned about the technology available in the partner schools and the classroom conditions such as class size, high stakes testing pressures, and behavior management concerns that they need to consider as they write their lessons.

How Important is Technology Support?

The participants in this program have benefited from expert technology support. The support they have received seeks to decrease reliance on outside sources by empowering the participants to do things for themselves. The effort will be sustained when the federal funding ends as the participants learn enough about technology to be

self-sufficient. Instead of the technology support specialist holding the mouse while others stand amazed, the learner maintains control of the mouse. The process is similar to learning how to drive. The technology support specialist is there to assist and direct, but encourages the learner to take charge.

Why is it Important to form a Collaborative?

The fact that this grant is applied for and awarded as a collaborative can serve to strengthen the work effort and bridge the digital divide. In the first year of Implementation, a cost share crisis developed for the collaborative at St. Thomas University. Two of the original partners, Trinity International University and The 21st Century Teacher's Network, dropped out of the program; their cost share commitment was lost. St. Thomas University also had a problem with resources whereby they were not able to meet the cost share they had committed. Because the PT3 program requires a matching commitment of funds, officials at St. Thomas University temporarily suspended the grant program until documentation of cost share could be established. This was where the title of the grant, "Bridging the Digital Divide in South Florida," became the reality of what happened. Representatives from Florida Gulf Coast University were able to supply the missing cost share. Other partners responded in the same way and contributed more then they had committed in the grant application. In this way, the digital divide was bridged because those on one side of the digital divide were able to rely on their partners to help them in a time of need.

On-Line Presence

Information about our project may be viewed at: http://garnet.fgcu.edu. To view these discussions, one may register for the PT3 Fall and/or spring courses and create an identity. Once this is done, posting will be enabled for the viewer. Our website also contains information that documents our workshop activities with our partners. Our website is located at: http://coe.fgcu.edu/PT3/home.htm.

Case Study: Internet Field Trips with Dr. Joseph Furner

Internet Field Trips in Mathematics are exciting. There is a need for technology use in mathematics teaching. This is emphasized in the National Council of Teachers of Mathematics Standards. There is a wealth of websites available for teaching math concepts using the Internet. Dr. Joseph Furner from Florida Atlantic University has participated on the Math team. His role as professor and lesson author has enabled him to produce lessons that can be used by his future teachers. He will present some sample lessons he has written with websites that are available on BEACON at www.beaconlc.org

National Educational Technology Standard-Based Lesson Plans Are Written

The technology enhanced lesson plans for the Fall 2001 Semester are written and can be viewed on the BEACON database. The website for BEACON is www.beaconlc.org. Selected lessons will be shown at this session.

Teaching Teachers How to Reach the Reluctant Reader Through Multimedia (When Theory-to-Practice Hits the Wall)

Lawrence Baines, College of Education, Texas Tech University, USA, lawrence.baines@ttu.edu

Peggie Price, College of Education, Texas Tech University, USA, peggie.price@ttu.edu

Abstract: During fall 2001, a cohort of prospective teachers worked with reluctant readers (students who are at least two grade levels behind in reading proficiency) in local schools. These prospective teachers experimented with traditional reading strategies as well as some promising, new multimedia approaches with the goal of enhancing the reading and writing skills of reluctant readers. Although these graduate students were knowledgeable and enthusiastic about multimedia approaches, they found classroom environments in local schools hostile to technology. In general, classrooms lacked any sort of technological infrastructure, teachers exhibited openly negative attitudes towards technology, and there was no support for innovative approaches to teaching reluctant readers. Surprisingly, half of the cooperating teachers were philosophically opposed to individualization, and forbade students from working with reluctant readers at all.

Traditional approaches to enhancing the writing, reading, and thinking skills of adolescent reluctant readers have been drawn from research with young children. Elements from programs such as Reading Recovery (Sensenbaugh, 1994) and Success for All (Slavin & Moore 2000) have been adapted to serve the burgeoning population of aliterate and illiterate American teenagers. According to recent results from the National Assessment of Educational Progress (Greenwald, Persky, Campbell, & Mazzeo 1999), less than 20% of American teens are able to write proficiently or better. Millions of children cannot understand or correctly interpret written materials at an elementary level and may be classified as functionally illiterate (Kaestle, Campbell, Finn, Johnson, & Mickulecky 2001).

Stanovich (2000) and Alverman & Moore (1991) have noted the deleterious presence of Mathew Effects in adolescents. In many ways, reading is an intellectual multiplier. The more students read, the larger their vocabularies become, and the more proficient they become as readers. Likewise, when students rarely read, their skills deteriorate, especially as the level of difficulty with texts escalates as they matriculate through secondary school. So, an ineffective reader in second grade may likely become a non-reader by tenth grade.

Popular, traditional techniques for reluctant adolescent readers include K-W-L (in which the student writes all that he/she knows about a subject, what he/she might want to know, and what they eventually learned), Think-Pair-Share, reading aloud, repetitive reading, vocabulary enhancement strategies such as semantic feature analysis, guided reading, and structured free reading.

Among the most successful adapters of such strategies are the teachers at the Benchmark School in Pennsylvania, a school expressly designed for students who read two or more grade levels behind their peers. Benchmark uses a rigorous, structured learning environment that emphasizes goal-setting, repetition, phonics, choral reading, extensive reading at and below grade level in a variety of genres, and much intensive, one-on-one instruction. If all goes well, after several years of work, students eventually begin to read at or above grade level (Gaskins 1997).

Some researchers (Babbitt & Byrne 2000, Crowley 1995, and McBride 1999) have suggested that problems of self-esteem and self-efficacy, not reading comprehension, are as likely to contribute to poor reading performance as more intellectual causes. Such researchers usually advocate discovering student strengths and interests and using them as springboards to spur interest and achievement in reading.

Elementary schools have been at the forefront in adopting programs which allow students to choose reading materials in their areas of interest. Programs such as DEAR (drop everything and read) and Accelerated Reader require that students be allowed to self-select books and mandate time for free reading during the school day. However, with these programs, teachers usually organize, manage, and chart the books that have been read rather

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than help provide remedial instruction for students who have difficulties with the act of reading. Still, Davies and Beaucamps (1999) found evidence that when programs such as AR and DEAR are adapted for use in secondary school, overall reading achievement among participants has improved.

Recently, Baines (1997, 1999, 2000, 2001) has reported impressive results from utilizing multimedia to enhance students' reading comprehension and writing skills. According to Baines, electronic media help concretize thoughts and feelings so reading and writing become less daunting to reluctant readers. When a teacher uses images, music, and other non-linguistic stimuli as integral components in reading and writing, the quality of student engagement and achievement have been shown to take dramatic leaps. In a recent study of 12 reluctant readers who had previously failed a state competency test for writing, using multimedia techniques resulted in a 100% pass rate on the second administration of the state exam (Baines 1999).

One example of the multimedia approach is the Powerpoint poem, in which students begin by responding to a series of prompts. Student responses are revised into a poem. Then, students draw images or find and cut out images in magazines to correspond with every line in the poem. Next, students scan the images onto disk. Once images for each line of the poem have been scanned, students create a presentation, downloading the images into Powerpoint, typing out the appropriate text so that each Powerpoint slide represents one line of the poem, and adding sound effects and music. As a final step, students revise their original poems to include descriptions of the images and music.

Classroom Instruction and Field Experience

Most preservice and practicing secondary teachers never have had a course in reading nor do they perceive the teaching of reading to be within the domain of their job responsibilities. When confronted with a non-reader in the classroom, most secondary teachers would respond, "I'm a science teacher (or whatever their field of expertise), not a reading teacher!" (Lortie 1975; Price, Schultz, & Verdi 2001). To ameliorate the lack of training for secondary teachers in reading, a new graduate course was developed.

The new graduate course, required of graduate students also seeking teacher certification, covers a variety of approaches to helping the adolescent reluctant reader, including technologically-intensive approaches. Of the ten graduate students enrolled in the initial offering of the course, only one had any previous experience with using computers. (The student with some experience had a spouse who worked for the Public Broadcasting System and she had helped with editing a film once). Prior to the course, no student had used Powerpoint or created a webpage. Only half had ever used email. Of the ten, four were seeking certification in social studies, three in English, two in mathematics, and one in Spanish.

In addition to time spent on campus, the ten graduate students were required to work with a struggling reader in a local school for at least 40 hours during the course of the semester. As part of their coursework, students created films (many used I-movie), Powerpoint presentations, and webpages explicitly for use in their interactions with reluctant readers in the field experience. In their one-on-one interactions with reluctant readers, students were instructed to use both traditional and multimedia approaches, to document the effectiveness of all approaches that they tried, and to write up a case study depicting their successes, failures, and frustrations.

Cooperating teachers were alerted to the duties of the student and the contours of their assignment via a letter of introduction. The cooperating teachers were responsible for matching the student with a reluctant reader. At the end of the term, cooperating teachers were asked to complete an assessment of the student's attendance, progress, and professionalism.

Results of the Hypothetical Case Study

As part of their final exams, students were given a hypothetical case study depicting the plight of two tenth grade football players named Augie and Javier who tended to misbehave and whose achievement tests indicated that they read on the third grade level. As in the field experience, students were asked to devise a set of lessons and activities

that would help improve the reading and writing skills of Augie and Javier, who were failing badly in most of their classes.

In the hypothetical case study, 8 of 10 students chose both traditional and multimedia approaches. The most popular traditional approaches included K-W-L, allowing students to self-select books (through programs such as Accelerated Reader or DEAR), learning logs, goal-setting, and utilizing reading recovery. K-W-L and other traditional approaches were seen as "innovative" by students, who had little familiarity with such pedagogical techniques. The most popular multimedia approaches included using Powerpoint, the Internet, film, and the creation of a webpage describing favorite books and magazines.

Students	Traditional approaches	Multimedia approaches
10	10	8

Table 1: Student use of traditional and multimedia approaches in the hypothetical case study

Although the final exam did not ask students to expressly address it, most students also paid great heed to affective issues:

"Knowing that Javier has a violent temper, I would first make sure that the class as a whole is constantly kept busy so that all students would have less time to engage in unwanted behavior."

"To improve their knowledge of English, I would try to draw on their strengths as much as possible in order to increase their sense of self-efficacy, which appears to be very low."

"A probable cause for their continued classroom disruptions is their inability to read and to comprehend text."

Obviously, most students in the graduate course viewed teaching from an affective perspective, a view Schwartz (1987) has called the "missionary mythology" of teaching. In their position as inexperienced teachers, especially the area of reading diagnostics, their prescriptive solutions indicated affective rather than cognitive concerns. In explaining how multimedia might be used to enhance reading, students wrote:

"If Augie liked baseball, I might ask him to do a Powerpoint presentation over the beginnings of baseball. Who were the important people and what were the names of the teams? Are any of the teams still around? One book that would help Augie is *A History of America's Game*."

"I would have Javier and Augie collect pictures and find music to accompany a Powerpoint poem written about football."

"To teach Augie and Javier Spanish, I would use a bouncy audio tape which combines the capitals of South America with lots of percussion, clips from Walt Disney videos in Spanish...perhaps involve them in designing a website if there's any interest in computers."

Two students chose not to even try multimedia approaches, even in the case study.

Hitting the Wall

Students were required to complete 40 hours of work with a reluctant reader in a local school. In general, the response from cooperating teachers to having a graduate student in the classroom was not overly enthusiastic. In Texas, where an obsession with student performance on the state assessment (TAAS—Texas Assessment of Academic Skills) is de rigueur, half of the cooperating teachers (five of ten) forbade graduate students from working one-on-one with an individual student. Representative of the attitude of "not singling out students" was a cooperating teacher who wrote, "When you ask your class to work with only one student, that student's self-esteem is damaged. Everyone in class will know who needs the help. That humiliates the student."

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On the other hand, in the case studies of the five students who were allowed to work individually with reluctant readers, most registered surprise by the willingness of reluctant readers to participate. Representative responses from graduate students about how well they were received are as follows:

"Sam and Terry were relegated to a permanent seat in the hall so they wouldn't disrupt class. Although I figured that I would meet with great resistance, they seemed anxious to participate. Even giddy sometimes."

"Delanie told me, 'I think it is fun when you come hang out in my classroom!' That made me feel pretty good."

"Bill plays sports and hasn't been doing well at all in most of his courses. So, in addition to helping him in class, I have shown up at a couple of his games. As a result, he has started pulling up his grades and his attitude seems to have changed.

Despite the apparent successes of the five graduate students who were allowed to work individually with reluctant readers, no graduate student used any multimedia approaches. Although the school district had recently received millions of dollars in funding for technology, graduate students noted the dearth of equipment in the classroom designated for student use. Not only did none of the ten cooperating teachers use technology in instruction (a computer, a camcorder, or anything electronic beyond a transparency machine) at any point during the semester, seven advocated against the use of technology in teaching. Student responses included the following:

"Mrs. Paulito says that teaching is too complicated already, that throwing technology in won't improve student learning. She seems too busy with the TAAS and discipline problems to think about much else."

"When I asked Mr. Suarez why he doesn't use technology, he laughed. He said that the district tried to force them to use computers once, but that they backed off because he knew they couldn't enforce it."

Although students learned the multimedia approaches and even applied them in the hypothetical case studies, they viewed the classroom environment as antithetical to innovation. No students used multimedia in their field experience. One student adapted the Powerpoint poem so that it could be done by using construction paper (with each line of the poem and corresponding images pasted on separate pieces of paper) and a cassette player.

Students	Students allowed to work 1-on-1 with a reluctant reader	Traditional approaches	Multimedia ap
10	5	5	0

Table 2: Student use of traditional and multimedia approaches in field experience

Providing Help Where Help is Needed

Although multimedia approaches to teaching reading to reluctant readers are new, exciting, and powerful, several factors militated against their successful implementation in our study. In general, cooperating teachers perceived that any technologically-intense form of instruction added unnecessary complications to their lessons, thus making them feel more "stressed out." Also, cooperating teachers acknowledged that they lacked the appropriate technological infrastructure and training to use multimedia approaches effectively, though they didn't really want equipment or training. One teacher commented, "I have enough to do already without worrying about computers, too!"

On the bright side, despite their initial lack of technological expertise, the graduate students in the new course seemed willing and able to implement multimedia approaches had they had access to the appropriate technologies and a modicum of support from their cooperating teachers. However, with the strong bias against technology openly displayed by cooperating teachers, many of the graduate students came away from the experience questioning the feasibility of implementing multimedia approaches at all.

The most surprising finding from our study was the reticence of cooperating teachers to allow any individualization for reluctant readers. Although each teacher acknowledged that they had several poor readers and that poor readers

were the most likely to fail the course, they forbade 1-on-1 contact, usually on the grounds that such individual attention would likely endanger a student's self esteem. Yet, graduate students reported reluctant readers as open, even anxious to receive personal attention. In the five cases in which cooperating teachers allowed graduate students to help individual students, all five reported some degree of success using traditional approaches. One can only wonder how reluctant readers, who have always struggled with text, can be expected to suddenly transform themselves into accomplished readers without some guidance and direction. Paradoxically, it is the reluctant readers who are the farthest behind who could most benefit from the kinds of jumps in reading and writing competence possible through new multimedia approaches. In our study, these most reluctant of readers were the ones least likely to receive such instruction.

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Can Preservice Teacher Education Really Help Me Grow As A Literacy Teacher?: Examining Preservice Teachers' Perceptions Of Multimedia Case-Based Instruction

Elizabeth A. (Betsy) Baker, University of Missouri - Columbia, US

PURPOSE

In 1985, Feiman-Nemser and Buchmann reported evidence that teachers overwhelmingly perceived that their preservice education did not adequately prepare them to be teachers. Since that time, teacher education programs have made purposeful strides toward improving preservice teacher education. For example, instead of providing student teaching as the only clinical experience, most programs now provide field experiences throughout teacher preparation.

Case-based instruction (CBI) is being used successfully in several professional schools (see Christensen, Garvin, & Sweet, 1991; Merseth, 1997; Shulman, 1992; Silverman & Welty, 1992). Risko and Kinzer (1994) argue that CBI can address weaknesses commonly found in teacher education (see also Lundeberg, Levin, & Harrington, 1999). A variety of cases have been used in teacher education. However, they commonly focus on the teacher, not the students. We wanted to help preservice teachers develop their kidwatching abilities so they can make instructional plans with the needs of children foremost in their minds.

With the support of two grants from USED/FIPSE, we videotaped and collected work samples from 10 elementary children throughout a school year. We digitized the video and work samples to create multimedia materials that are being used for CBI. We refer to these multimedia materials as the Digital Literacy Portfolio Series (DLPS). While we have conducted other studies that examined the effectiveness of using DLPS (Author, 2000a; Author, 2000b), in this study we examined whether the preservice teachers perceived that a seven-semester-hour block of literacy courses that incorporated DLPS and a related field experience helped them grow as literacy teachers.

During our presentation, we will demonstrate DLPS which allow users to track elementary children's literacy development during seven-eight months of school. DLPS includes video of children reading and writing during math, science, social studies, and literature. DLPS also has scenarios that users can read to understand the video context. Finally, DLPS includes writing samples and portions of children's books that correspond with the video. This series consists of 18 CD-ROMs that each contain approximately an hour of video.

Our guiding questions were: Do preservice teachers, involved in multimedia case-based instruction, perceive that a block of literacy courses coupled with a field experience helped them grow as literacy teachers? If so, to what do they attribute their growth? These findings contribute to the growing body of knowledge regarding different types of case-based instruction and various effects on preparing teachers to enter the profession.

THEORETICAL FRAMEWORK

Theories of anchored instruction (Cognition and Technology Group at Vanderbilt, 1990) suggest that learners benefit from discussions when they share common experiences. For example, literacy teachers who work in the same classroom benefit from the ability to discuss what happens in their classroom. These shared experiences become the anchor of their discussions. However, providing a similar anchor during teacher education courses is a challenge. It is difficult to place 20-35 preservice teachers in the same elementary classroom so they will have a common classroom experience to discuss. With CBI, the learners' common experience is a case. Because the learners are familiar with the same cases, they can discuss how their different field experiences are similar and dissimilar to the case. Herein, the learners can gain an understanding of one another's divergent field experiences and potentially help one another understand each other's field situations.

Research indicates that effective teachers reflect on their practice (Schon, 1983; Zeichner & Tabachnik, 1984). In other words, they ask themselves questions such as: Are my teaching methods and materials effective? How can I improve my instruction to meet the needs of my students? What can I do differently? What teaching methods and materials work for which students? What information am I lacking and where will I find it? Because reflection is critical for effective instruction, preservice teachers must develop appropriate reflection practices. Such reflection can be addressed in field placements. However, comparing reflections is difficult because of differences in field placements. Thus, peers and instructors can offer only limited feedback, which leaves preservice teachers to develop their own reflection skills. CBI provides an anchor that preservice teachers and instructors can use to discuss and hone their reflective skills.

Theories of situated cognition argue that "knowledge is situated, being in part a product of the activity, context, and

culture in which it is developed and used" (Brown, Collins, & Duguid, 1989, p. 32). In terms of teacher education, just because preservice teachers demonstrate the knowledge to pass tests and write papers about teaching children to read, does not mean they will be able to teach children to read. Theories of situated cognition imply that field experiences are vital for preservice teachers. However, without anchored situations, preservice teachers are limited to their own insights and making their own connections between course work and practice. Due to the common experiences provided by CBI, peers can generate and discuss these connections with the potential of implementing them in the field.

Theories of generative knowledge argue that learners do not commonly make connections between knowledge that is dispensed to them (i.e., via lectures) and situations where that knowledge can be used (i.e., elementary classrooms) (Bransford, Franks, Vye, & Sherwood, 1989; Bereiter, & Scardamalia, 1985; Whitehead, 1929). Instead, learners make better connections when they generate knowledge (Risko, McAllister, Peter, & Bigenho, 1994). CBI purposely requires learners to generate their analyses of the cases (Christensen, 1987; Christensen, Garvin, & Sweet, 1991; Merseth, 1997; Shulman, 1992; Silverman & Welty, 1992).

Teaching is an ill-structured task (Clark, 1988; Greeno, & Leinhardt, 1986). This means that teachers need to be able to make decisions based on constantly changing sources of information; they need to be problem-solvers. Field experiences give preservice teachers opportunities to try methods discussed in courses, but little experience in dealing with the ill-structured, complex nature of teaching. Furthermore, the ill-structured nature of teaching requires preservice teachers to understand the viability of different perspectives. We purposely developed DLPS to capture a variety of classroom complexities that can be discussed from a variety of theoretical and pragmatic perspectives.

METHOD

Participants and Setting

This study occurred in a midwestern state university in a section of a course entitled, "Emergent Literacy for Elementary Teachers." The section was selected because Author 1 was the instructor and one of the DLPS developers. The students were first semester Juniors who had taken 8 semester hours of introductory education courses during their Freshman and Sophomore years. They had also done over 20 hours of classroom observations during their Freshman and Sophomore years. This was however, their first semester of taking methods courses. There were 26 students in the class, 24 females and 2 males. All the students were Elementary Education majors.

The course was part of a block of literacy courses that included 2 semester hours of Children's Literature, 2 semester hours of Emergent Language, and 3 semester hours of Emergent Literacy for Elementary Teachers. These preservice teachers also participated in 2 semester hours of field experience in which they worked with a partner to teach 8-10 literacy lessons to a small group of elementary children. They collaborated with the elementary children's teacher to design, implement, and reflect on their lessons and the progress of the children's literacy abilities. The participants took this block of literacy courses as a cohort. In other words, the same group of preservice teachers attended Children's Literature, Emergent Language, Emergent Literacy, and Literacy Field Experience (9 hours per week) together.

Author 1 is a professor of literacy education. At the time of this study, Author 1 had taught literacy courses to preservice elementary teachers for 9 years. She had used Multimedia Cases in Teacher Education (Kinzer & Risko, 1998) as well as book-based cases (i.e., Avery, 1993; Harp, 1993; Routman, 1994) for 5 years. This was the second semester she used DLPS.

The course met once a week, for three hours, during a 16 week semester. The course was divided into three modules: children's literacy processes, teacher decision-making, and professional development. Case-based instruction was used throughout the semester. Case-based instruction was used during 11 of the 15 classes (3 other classes were used to complete pre and post tests and provide a general introduction to the course). Specifically, six classes were dedicated to analyzing a multimedia case of a child named Zane, four to Helen, and one to Kenneth. These three cases were collected in the same first-grade classroom. At the beginning of the school year, Zane (European American, male) was considered an emergent reader, Helen (Asian immigrant, bilingual, female) was a developing reader, and Kenneth (Asian American, English First Language, male) was a proficient reader.

Data Sources and Analysis

At the end of the semester each preservice teacher voluntarily participated in an individual interview. A trained research assistant conducted and audiotaped the interviews which lasted approximately 30 minutes. These interviews were designed to address the question: How do the preservice literacy teachers, involved in multimedia case-based instruction, perceive the efficacy of their teacher education course work? The preservice teachers were given a folder that contained their case analyses and field reflections throughout the semester. They were asked to examine their own work and answer among other questions: a) have you grown as a literacy teacher this semester, b) if so, list experiences

that contributed to your growth, c) rank order the experiences you listed.

The interview data were transcribed and analyzed by sorting each participant's list of experiences into common categories (i.e., field experiences, case assignments, class readings, etc.). Finally, the categories weighed according to the rankings given by the preservice teachers.

FINDINGS AND DISCUSSION

Analysis of the students' answers revealed three categories of responses: (a) DLPS (class discussions, comparing the digital portfolios to one another, homework, examining DLPS), (b) field experiences (teaching, reflecting about teaching, discussions of field with instructors and supervisor, substitute teaching), and (c) other course assignments (readings, activity demonstrations, analyzing basals). This interview question was open-ended. The students could list anything. Yet, DLPS emerged as one of the three factors that influenced their growth.

In order to understand further how important DLPS was to the students' kidwatching growth, we assigned points to the students' rankings (5 points for first ranking, 4 for second ranking, and so on). Analysis revealed that 51.6% of the weighted statements identified DLPS, 24.2% identified field experiences, 21.4% identified other course assignments, and 1.6% were miscellaneous. In other words, the preservice teachers overwhelmingly attributed their growth to using DLPS.

These findings are significant because one might expect the students to overwhelmingly identify field experiences. After all, during field experiences they discuss topics, model strategies, ask questions, and conduct observations with real children. This data does not indicate that field experiences are insignificant--on the contrary, they outweighed all of the other course assignments combined (except using DLPS).

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Training the Trainers: Technology for District ESOL Specialists

Cathy Cavanaugh, Ph.D., Curriculum & Instruction, University of North Florida, USA. ccavanau@unf.edu

Terry Cavanaugh, Ph.D., Curriculum & Instruction, University of North Florida, USA. tcavanau@unf.edu

Abstract: Based on knowledge of ESOL learners, adult education, and teacher integration of technology, two faculty members from a regional state university partnered with the local school district to develop a training program that would ultimately improve the learning of ESOL students. The faculty members, instructional technology professors, worked closely with the school district ESOL director to develop and deliver training that would meet the needs of school ESOL coordinators who work directly with teachers. During the course of one academic year, this organizing team conducted a needs analysis, created training opportunities, and carried out training for all district ESOL coordinators.

The goal of the project described here was to improve the skills of teachers to effectively integrate technology into standards-based lessons for improved achievement of students in programs such as ESOL (English as a Second Language, also known as EFL, ESL, EFL). This training project, using the train the trainers model, provided knowledge, skills and resources to school district ESOL coordinators who would provide training to the ESOL teacher. The research grounding comes from studies of how children learn best using technology, and how teachers best learn to integrate technology into teaching. The standards include National Staff Development Standards, national student and teacher ESOL standards, International Technology Education Association Standards for Technology Literacy, state technology standards, and International Society for Technology in Education (ISTE) student and teacher standards. Because a major barrier to teaching with technology is lack of resources to enhance integration of technology with classroom learning, this project worked to ensure that ESOL teachers received guidance in effective practice for teaching ESOL students with technology with the technology currently deployed in their classrooms.

Nationally, the number of students enrolling in school ESOL programs has increased steadily in recent years. According to the US Census Bureau, the number of Americans in 1990 between the ages of 5 and 17 who did not speak English well was 907,563. In the 2000 Census, the number had grown to 1,161,055 (US Census 2001). ESOL students are often children who come from economically disadvantaged households, and they are far less likely than their native English-speaking classmates to arrive in school with technology skills. In fact, the National Telecommunications and Information Administration reports on the digital divide in "Falling through the Net" that about half as many minority households have computers as white households (NTIA 2000). The same report states that "schools, libraries and other public access points continue to serve those groups who do not have access at home". Further, groups such as Blacks, Asian Americans and Pacific Islanders are far more likely to use public libraries to access the Internet. Internet access and the skills to use the Internet and the resources found there are important in improving the lives of ESOL students and their families. If ESOL teachers do not use technology in their classes and teach their students to use the technology, students in ESOL classes may not otherwise acquire computer access and skills. The state guide for ESOL teachers and administrators (Florida Department of Education 2000) states, "technology holds an important place in the implementation of the curriculum, linking schools, community, and the world".

The national teacher shortage includes a shortage in teachers trained and experienced in meeting the unique educational challenges of the ESOL student. ESOL students face challenges of assimilating into a new culture, learning a new language, and learning subject matter in a new language. For these children technology is a tool that has the potential to help them meet content standards, and it is a pathway to employment and further education. Not only can educational technology provide tools especially designed for the language development and content area learning of ESOL students, but technology in ESOL classrooms can also begin to close the digital divide for these students. Through training school district ESOL specialists, area ESOL students are more likely to have teachers with the skills and knowledge to use technology in ways that increase ESOL student achievement. The aim of this training was ensuring academic benefits for students that can be attributed to improvements in teacher practice using technology.

Educational technology is a powerful teaching and learning tool and it requires specific abilities and knowledge to reach maximum effectiveness. Teachers have expressed a need for assistance in integrating technology into their standards-based classroom lessons. The components of the training provided in this program were intended to meet the need expressed by teachers and ESOL coordinators. Adult education principles state that professionals must have time, support and access to technology as well as scaffolds to assist them in using technology in meaningful ways in their jobs (MacKenzie 1999). Because The ESOL coordinators belonged to each of the skill stages of technology use by teachers, the project's professional development activities addressed teachers at each level with the goal of guiding teachers from their current stage to at least the next stage, and to guide teachers at the Invention stage to higher competence within that stage. The resources and experiences included in the training gave ESOL coordinators the capabilities that will increase their competence in using the technology to move from the Entry stage toward the Invention stage, and therefore to lead classroom teachers through the continuum.

Surveys of employers and higher education institutions show that students should leave school with strong skills in communication, cooperation, problem solving, and self-direction. ESOL students begin their education in Florida's schools with a significant deficit in English communication. The training of ESOL specialists was intended to give ESOL students in the area schools the pedagogy, tools and expert teachers they need to improve their communications abilities from beginning to fluent levels. Technology is one of the tools that students and teachers can use to achieve language fluency.

In order for the learning, language and technology gaps to be closed, teachers of ESOL children need expanded access to technology equipment, resources, and effective integration methods for the specific needs of their students. The training resulted from a vision of technology-rich classrooms where ESOL students effectively use modern computers and peripherals, with software, online resources and network resources in learning to engage in authentic communications experiences with peers, their families and subject matter experts.

According to ISTE (2000), the most effective learning environments meld traditional approaches and new approaches to facilitate learning of relevant content while addressing individual needs.

The resulting learning environments should prepare students to

- Communicate using a variety of media and formats
- Access and exchange information in a variety of ways
- Compile, organize and synthesize information
- Know content and be able to locate additional information as needed
- Become self-directed learners
- Collaborate and cooperate in team efforts
- Interact with others in ethical and appropriate ways

The national Teachers of English as a Second Language (TESOL) organization suggests that teachers use the following strategies in implementing standards-based instruction (Irujo, ed. 2000):

- Organize learning around what students need to know and be able to do
- Enrich their teaching by cultivating students' higher order thinking skills
- Guide student inquiry by posing real-world tasks
- Emphasize holistic concepts
- Provide a variety of opportunities for students to explore and confront concepts and situations
- Use multiple sources of information
- Work in interdisciplinary teams
- Use multiple forms of assessment to gather concrete evidence of student abilities

Research on students using technology within the context of specific subject areas shows many benefits. For example, students using word processing feel more positive about their writing skills, improve the quality and fluency of their writing, are more self-motivated in writing, are motivated to achieve literacy, improved in literacy, and want to write more. Word processing lead to more time spent on revising writing drafts, higher quality revisions, and increased the length of writing. When using word processors students more readily developed conceptual abilities, composed more fluently, and produced enhanced science-related documents. Word processing caused students to overlook fewer errors and make fewer errors (Poole 1997). Students had higher comprehension scores after reading electronic text than after reading printed text (Bitter & Pierson 1999).

Students using computers for learning math and problem-solving showed greater achievement gains, learned concepts more effectively, and scored higher on measures of ability to transfer skills to other areas of mathematics. Students who used computers in the science classroom achieved more from computer-based labs than from

conventional activities, more effectively learned to generate graphs and analyze data, more easily transferred understanding from one type of physical activity to another, and gained data-handling skills likely to be valuable throughout life. Students accessing information electronically were able to get information faster and develop research skills (Poole 1997).

Studies of teachers who effectively integrated technology into teaching will serve as a guide in the development of model professional development activities in this project. Properly trained teachers make the difference between success and failure of an integration effort. Teacher training programs are most effective with:

- a hands-on, integration emphasis and a focus on how to use the technology tools on the classroom
- training over time
- modeling, mentoring and coaching, learning through colleague interaction and information sharing
- post-training access to the technology for practice and implementation

(Roblyer & Edwards 2000).

The local public school district involved in this project currently serves 2128 active ESOL students in grades preK through 12. Over 39% of the district's teachers work with ESOL students in two-thirds of the district's schools. The district's New Century Commission on Education has developed key recommendations for improving area schools. The first is to hold all students in the district to the same high expectations for learning and academic performance. Another goal of the Commission is to provide all students with access to competent and expert teaching. Based on knowledge of ESOL learners, adult education, and teacher integration of technology, two faculty members from a regional state university partnered with the school district to develop a training program that would ultimately improve the learning of ESOL students. The university faculty members, instructional technology professors with ESOL experience, worked closely with the school district ESOL director in the process of developing and delivering training that would best meet the needs of school ESOL coordinators who work directly with teachers. During the course of one academic year, this organizing team conducted a needs analysis, created training opportunities, and carried out training for all district ESOL coordinators.

The needs analysis for the ESOL technology training program took into account the district's technology assets and infrastructure, the technology ability level of the ESOL teachers, and constraints on scheduling training. The district's A+ Goals (Academic Excellence and Achievement for All Students) emphasize increased use of technology, high-tech learning tools, and the use of computer technology to pinpoint, monitor, and report every student's strengths and weaknesses to help each student reach academic goals in every subject. To meet these goals, the district has implemented a technology model that specifies network connectivity and computer equipment for each classroom. When the model is fully realized, each classroom will have network connectivity, eight data drops, four student workstations, and a teacher laptop plus peripherals. The model is currently being implemented at the high school level, and middle schools will be the focus next.

A main goal of the ESOL technology training was to complement and facilitate implementation of the district model in the target schools. All of the technology skills and resources provided by this project to ESOL coordinators was fully compatible with district standards and integrated seamlessly with current and future network infrastructure. Because each ESOL coordinator involved in this program served schools and teachers with unique needs, the project had a different role in each case. Based on the results of the needs analysis, the structure of the training evolved to include skills, standards and strategies. The training would focus on a set of technology skills that could be broadly applied by the teachers in helping K-12 students to meet essential academic and technology standards using technology that commonly available in ESOL classrooms. The training would be aimed at teachers working at the entry level in educational technology, and it would be offered during district staff development times to reduce the burden on busy schedules.

The training took a four-pronged approach. As an introduction to the integration of technology for improving ESOL learning, the district ESOL coordinators attended sessions given by the university faculty members at the state ESOL conference. The benefits of this method were that the coordinators did not need to make time in their schedules for beginning to learn about technology, and the coordinators received the information along with their colleagues from across the state, enabling them to hear how others were successfully using the technology. The conference sessions, developed at the request of area ESOL specialists, focused on digital cameras, the web, concept maps, writing tools, web resources and word processing. The coordinators received printed handouts and web links to review before participating in the next phase of the training project. They also had time to observe the teachers and the technology in the schools before participating in more immersive experiences.

For their second collective educational technology experience, the ESOL coordinators attended a half-day session during which the university faculty members demonstrated and discussed a range of technology options within the specific context of the area schools. The coordinators then prioritized the technology skills they felt were

most beneficial for their teachers and most practical for their schools and students. The university professors designed a full-day hands-on workshop centering on six core technologies presented in centers in a technology lab. Because a goal of this project was improving ESOL student achievement in communication, equipment, software and Internet resources were chosen to support student reading, writing and speaking abilities. The workshop provided the coordinators with printed guides to using the technology in ESOL classrooms, a CD-ROM with related guides and software, and time to become comfortable using the technology. The components of the training were an overview of national ESOL standards pertaining to technology, uses of the computer as an audio tool, concept mapping software, digital cameras, uses of DVD for language development, improvement of word processing, and the web. Computers connected to the Internet can bring the world of the English language and American culture into the ESOL classroom, and allow student products to leave the classroom through email, enhanced by photos taken by students using digital cameras. Work produced during these enriched communication experiences can be printed using networked printers, so students can carry their new language home to share with their families.

Quality software and digital content resources give teachers the power to address individual learning needs and styles. By providing the coordinators with software recognized for strengthening communications and thinking skills, the training gave coordinators tools to share with teachers that facilitate improved student achievement. Software recommended in the state software catalog and other sources were featured in the training. Software for thinking and communicating had priority, including developmentally appropriate writing, speaking and reading software, and cognitive mapping software. This component met state and federal goals by increasing access to effective software and online resources, thereby assisting teachers in development of technology-supported curriculum integrating district and state standards for content learning, ESOL education, and learning with technology.

In the final stage of training, the ESOL coordinators and the university professors met to plan the redesign of district ESOL teacher training materials. Currently, all teachers of self-contained or mainstreamed ESOL students must obtain state ESOL endorsement. The endorsement requires between 30 and 360 hours of training depending upon the teacher's certification area. The district ESOL coordinators are responsible for the teacher training. The existing technology component of the training used audiotapes and laserdiscs. Together, the district and university partners constructed a teacher training module that could be taught face-to-face, on a CD-ROM, or online. The revised activities incorporated concept mapping software, web resources, CD and online audio, word processing, digital photography, multimedia presentations, electronic books, and CD-ROM creation.

The components of the training helped the district to meet two of the state and federal goals for teaching and technology: (1) All teachers will have the training and support they need to help all students learn through computers and through the information superhighway, and (2) All schools will have the assistance needed to develop technology-supported curriculum integration strategies which are thoroughly described and aligned with specific state standards. The training and materials helped meet goal 1 by supporting teachers with examples of approaches for teaching with computers and the Internet. They addressed goal 2 by assisting teachers to develop technology-supported lessons aligned with state standards, and by assisting them in meeting state performance standards for ESOL teachers.

The participants did process evaluation of the ESOL teaching with technology professional development activities. Participant feedback was obtained regarding:

- The quality and quantity of the content
- The pace and organization of the activity
- The quality and quantity of the instructional materials provided
- The amount and appropriateness of the tasks for ESOL education

As a result of the range of technology training experiences they received, the district ESOL coordinators are now beginning to diffuse their knowledge, skills and resources to the teachers in ESOL classrooms. However, like many school districts across the country, the local school district is strongly committed to school reform efforts. These efforts require much in the way of teacher professional development, adapting instruction, and change in the operation of schools. As a consequence of these efforts, not all of which include technology as a priority, teachers are left with little time and energy for changing their methods further to integrate technology. While the district ESOL leadership and the majority of the ESOL teachers agree with the importance of technology for their students, other demands have so far prevented significant progress in implementing the new technology approaches with students. Even computer-literate ESOL teachers have been overwhelmed with National Board certification, graduate courses, America's Choice rollout, and new school-based programs. An additional obstacle for some teachers has been theft of classroom computers.

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In order to share the technology approaches developed in this project beyond the local district, the university faculty are beginning a regular technology integration feature in the state TESOL journal. In conclusion, the training program has prepared and will continue to prepare ESOL specialists to guide teachers in integrating technology into instruction, but priorities or conditions faced by teachers will have to change before conditions are optimal for the integration to occur on a large scale.

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Understanding technological narratives and their roles in teaching and learning: An investigation of electronic narrative tools in education

Minchu Chen, University of Florida, US
Richard Ferdig, University of Florida, US

Electronic narratives are becoming prevalent in education as one way to teach students about narrative structure, content, and even technology (Lehrer, Erickson & Connel, 1994; Downes & Fatouros, 1995; Eagleton, 1999; Leu & Kinzer, 2000; Eagleton & Hamilton, 2001). The reason they are become popular is because they enable the invention of new media and forms for stories, reaching beyond oral speech, handwriting, and movable type (John S. & Anna Lorien, 2001) Electronic narratives provoke amazing plays on the ways that oral or written stories tell events for characters who move among their settings. They allow students to use a variety of technological and information resources to gather and synthesize information and to create and communicate knowledge (NCTE/IRA 2001) around local, state, and national standards.

Many examples of electronic narratives have been developed in response to this new educational technological possibility. Universities and educational institutions in specific are following an interest in narrative by incorporating narrative, interaction, and virtual reality structures in the development of educational technologies for teaching and learning (Karraker, 1996). For example, MIT's Papert's Epistemology and Learning (Papert, 2001) highlights some of these concepts in the form of constructionism; HITL (Human Interface Technology Laboratory) researchers at the University of Washington address educational issues in virtual reality (HITL 2001); the Virtual Theater at Stanford University explores the areas of narrative, characters, agents and coherent scenario structure related to children's learning development (Education index , 2001); finally, the text -based virtual communities of MUDs (Multi-User Dungeon) and MOOs (MUD Object-Oriented) find users collaborating to create virtual stories about their lives and their worlds (MUDS, MOO, etc., for Education, 2001)

Within the genre of electronic narratives, there are various applications of both theory and practice (Roussos, 1996). At one end of this scale are simple levels of interaction such as cartoon video with animation, sound effects, and varying levels of user control (Folk legends of Japan 2001). The more advanced products infuse human experience in developing the electronic story. An example of these more elaborate models is Laurel's Interactive Fantasy (Laurel, 1991), where users deal with narrative, characters, and plot structure. The software requires the user's control and manipulation to form the plot, content, and outcome of the story (Steiner & Moher, 1992; Steiner & Moher, 1994; Steiner, 1995).

At either end of the spectrum, one major benefit of the electronic narrative is its ability to integrate concepts of learning theories and curriculum objectives into a computer-based setting, and the opportunity to extend the above efforts into a complete environment that shares common characteristics and experiences between teacher and learners (John S. Nelson &Anna Lorien Nelson). Then therefore, the model of an electronic narrative is indeed a desired educational approach to provide a natural, simple, and familiar mode of access, operation and interaction (Labbo, 1996).

However, while numerous designs of multiple interfaces and hand-on computer software are being developed—and developed for different audiences like teachers, children and parents--there is an increasing need for rubrics to help differentiate between the good and bad products. The field of educational technology would benefit from a further exploration of the term 'electronic narrative', as well as a categorization of the different types of available products and how they might be used in education. Rather than focusing on specific products, there is a call to describe the characteristics behind the development of various types of electronic narratives, assessing them on the quality of presentation and design, the educational value, ease of use, play life, and factors of importance to educators and parents. This approach allows us to continue discussions of important rubrics rather than judging specific software (Review of Children's Educational Software April 1998 *http://www.sil.org/ched/edsoft.html)*.

Therefore, the main goal of this paper is to further investigate and define the electronic narrative, and to address the strength of electronic narratives as fundamental units of knowledge, memory, and ways we make sense of our lives. Through the existing models and examples of electronic narratives, this paper presents the power of this uniquely engaging, flexible environment for accessing, analyzing, and producing modern forms of communication (Hamilton, 1998). It explores how the application of an electronic environment can simulate a storyteller, which provides the essentials of communication for teaching and learning that are based on the human stories experience (Melanie, 1998). Further, it provides evidence that stories are represented and integrated within technology with less constraints of form. Finally, we describe how an electronic narrative can be developed and integrated in more engaging and meaningful ways in education.

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A Distance Education ESL Endorsement Program: Failures and Successes

Nedra A. Crow, National University, San Diego, CA, USA, ncrow@nu.edu
Joan P. Sebastian, National University, San Diego, CA, USA, jsebasti@nu.edu
Peter Serdyukov, National University, San Diego, CA, USA, pserdyuv@nu.edu

Abstract: This paper describes a distance education model for an ESL endorsement program designed for K12 educators. The program evolved through several critical changes based upon technological challenges. Finally, the paper highlights the successes, failures, and lessons learned.

With the increasing population and urbanization of city centers within Utah, the complexion of Utah's children has rapidly changed, mirroring the changes that have taken place throughout the United States. These population changes created a growing demand for professional development programs to prepare educators to meet the specific linguistic and cultural needs of their students. However, the ESL preparation programs at institutions like the University of Utah were very small endeavors incapable of producing no more that a few ESL teachers. Out of such a dilemma came a unique and innovative partnership among six school districts as well as two colleges within the University of Utah dedicated to the development and implementation of a distance education ESL endorsement program for a projected 1800 experienced teachers. The program required that educators take the courses over a three-year period. Three groups of educators would complete the three-year sequence of 26 credits. Each group was called a Round. Each Round was scheduled to begin during Autumn Semester.

This program became known as DEEEP (Distance Education ESL Endorsement Program), and evolved throughout its five-year history because of changing program needs and technological challenges. Given the limited space of this paper, we will: 1) describe the evolution of the program and the distance education delivery approaches and 2) discuss lessons learned.

Evolution of Program and Distance Education Delivery Approaches

In the fall of 1998, Round I began and consisted of eight graduate level courses. These courses were delivered to 18 teaching sites in one rural and five urban school districts. The districts comprised about 75% of Utah's public school population. There were three courses in Year One that used satellite technology delivered and supported at each site by content facilitators. Satellite transmission was contracted through a private provider called Educational Management Group (EMG). Because of the heavy theoretical base of the courses in Year Two, the program developers decided that these courses should be delivered using onsite instruction provided by University clinical faculty members. Year Three consisted of three courses delivered to the participants through video-based instruction, web-enhanced curriculum strategies, and onsite facilitators. Again, EMG was contracted to develop and provide these video modules created by University faculty.

In January of 1999, EMG representatives informed program directors that the company was purchased by Pearson Publishing Company who then determined that EMG was not a viable entity. During contract re-negotiations with EMG and Pearson representatives, Echostar Company was selected to provide the satellite delivery for the Year One courses to Round II and Round III participants. Contract changes also meant that the Year Three video and web-based courses would be developed and implemented by a University of Utah applied technology group called Media Solutions.

The transition to Echostar was difficult, complex, and complicated for several reasons. Firstly, all satellite equipment that was located on 20 K12 school buildings as well as the uplink facilities at the University of Utah needed to be changed by mid-August of 1999. However, discussions between Echostar and Pearson representatives were not completed until July. Once satellite and needed computers were installed at the K12 sites, local school educators immediately began to cannibalize the computers and associated hardware, including TVs and cable connectors. Therefore, when Echostar system testing began a few days before the start of Autumn Semester, communication was non-existent at most sites. This situation strained relationships with K12 educators as well as Echostar managers and technical staff. Furthermore, technical training for the onsite facilitators was delayed and compromised because of a lack of functioning equipment.

With the start of the Round II, Year One courses, full compromised, satellite transmission became the next challenge. The quality of the transmission was always a point of concern for all parties. From the Echostar standpoint, they were frustrated with the "low tech" equipment at the University of Utah's uplink studio site. They noted that the non-commercial studio cameras resulted in poor picture quality that was unacceptable to them. Furthermore, the uplink transmission station in Wyoming was not communicating with Echostar facilities in Denver nor K12 downlink sites in Salt Lake City, let alone the University studio facilities. As a result, chaos prevailed and instructional sessions did not. Ultimately, by October of 1999, the satellite transmissions were abandoned in favor of video taped lectures, quickly dubed, and sent to 10 teaching sites by Federal Express.

Also, during Fall of 1999, video production for Year Three courses began. Because Media Solutions was a University based agency, the DEEEP Directors worked closely to link video production personnel with the instructor for Year Three courses. However, challenges also became evident by November of 1999 when the faculty member did not meet any script or filming deadlines. Therefore, videos crews, studio schedules, and print material were delayed and rescheduled multiple times. These delays compromised the implementation of Year Three

With development of the Year Three courses behind schedule, and the advent of a new DEEEP Director, new challenges were effecting the program. Then, in May 2000, due to changes in the state's ESL endorsement requirements and lack of educators' participation in DEEEP, the program was modified into a two-year, six courses sequence and offered at six teaching sites. The new Director guided development of the website and completion of the program through Round I and II. Under his leadership and that of the previous directors, over 400 K12 educators received a high quality ESL endorsement program influencing countless children. While this number was greatly reduced from the originally projected 1800 educators, the impact is still believed to be significant to these school districts and children.

Lessons Learned

The lessons learned were numerous, painful and revealing. These lessons will be briefly outlined in four themes. Firstly, the closer you can maintain control over the technology, the greater the likelihood of program success and stress reduction. Working with commercial and non-educational providers created a myriad of challenges, the greatest of which was communication and expectation.

Secondly, being on the technical cutting edge with so many stakeholders and for such a large and a complex endeavour is a good formula for failure. Sometimes, being on the technical cutting edge means bleeding.

Thirdly, it is important to start small when dealing with highly complex, collaborative, and technologically sophisticated programs. Attempting to deliver an academically rigorous, eight course endorsement program using high level technology to K12 teachers, many of whom, expected workshop, "how to" techniques is a recipe for disaster.

Finally, working with diverse professional stakeholders, including higher education faculty and administrators, K12 administrators, commercial providers, and classroom teachers' results in cultural conflicts and stressed communication. While the concept of multi-professional collaboration is intriguing and has merit, in reality it is fraught with inherent barriers, competing needs, and often, insurmountable conflicts. This is not to suggest that such collaborative endeavours should not be attempted, it is to stress the need to always put the K12 students in the middle of the table and never lose sight of them. For this is the only reason, that such competing interests and people would and should come together.

Literature, Differentiated Instruction, and the Internet

Gail Hymel Dack
Department of Curriculum and Instruction
University of Louisiana at Lafayette
United States
gdack@louisiana.edu

Sally McClure Dobyns
Department of Curriculum and Instruction
University of Louisiana at Lafayette
United States
sdobyns@louisiana.edu

Mary Jane Ford
Department of Curriculum and Instruction
University of Louisiana at Lafayette
United States
mjford@louisiana.edu

Abstract: The purpose of this project was to develop a differentiated learning activity that accommodated a variety of reading abilities, interests, learning profiles, and experiences in using technology. Project objectives were (a) exposing participants to a variety of stories written by Beatrix Potter, (b) using the appeal of technology to overcome participants' impression of Potter's works as "babyish" or for "little kids, (c) using the Internet to provide reading texts when multiple copies were unavailable, and (d) developing or enhancing skills in the use of Internet resources.

Introduction

Among popular children's literature, few selections rival the timeless quality of Beatrix Potter's classic works (Lipson, 2000). Many youngsters in today's primary grades fail to read works by Potter because of the discrepancy between the higher readability levels of the books and the young age at which the stories are presented. The majority of these works are suggested for preschool or first graders (Hirsch, 1997).

To assist students who must cope with reading texts that are long or difficult, Mackey & McClay (2000) reported the effectiveness of electronic rather than print books and noted "the introduction of new media and technologies make new demands on readers as they organize and interpret complex forms of text" (par. 1). Studies (Seng, 1998) supported the integration of technology in the early childhood classroom as tools to enhance social, language and cognitive skills.

Students in elementary classrooms vary greatly in important ways, yet a "one-size-fits-all" approach to teaching and learning largely ignores these individual differences. With convincing evidence that success in school is enhanced when teachers attend to differences in readiness levels (Vygotsky, 1986), interests (Csikszentmihalyi, 1997), and learning profiles, (Sternberg, Torff, & Grigorenko, 1998), all too often little meaningful differentiation takes place in most third grade classrooms (Westberg, Archambault, Dobyns, & Salvin, 1993). Tomlinson (1999) described differentiation as "an organized yet flexible way of proactively adjusting teaching and learning to meet kids where they are and help them to achieve maximum growth as learners" (p. 14). She suggested that teachers differentiate content, process, and product according to students' readiness, interests, and learning profile.

Egan (1999) recommended the use of graphic organizers in classroom instruction to make learning more meaningful. She noted the interactive nature of learning activities that employ such organizers and encouraged educators to incorporate them as tools for positive social interaction. McLoughlin and Oliver (1998) reported that since students must share resources, technology-using environments are usually collaborative.

Purpose and Procedures

Participants included 11 boys and 9 girls in grade 3. Students displayed a variety of reading levels, interests, and skills. On entry-level reading measures, six students scored above grade level, nine scored on grade level, and five scored below grade level. Two had repeated a grade; another was slated to repeat third grade the following academic year. Four students participated in a special reading remediation program. Four students attended enrichment classes, although none was identified as gifted. The ethnicity of the student participants was as follows: 15 Caucasian, 2 African-American, and 3 Hispanic-American, 2 of whom had received ESL instruction. The school was in a low income neighborhood; more than 50% of its population were eligible for free or reduced lunch. However, fewer than half of this class qualified for that program.

A reading unit was designed to feature books by Beatrix Potter when it was discovered that only three of the twenty students had read *Peter Rabbit* and that none of the children was familiar with other works by Potter. The teacher introduced the unit by featuring *Peter Rabbit* as a read-aloud. A two-session Internet activity was planned for the required weekly visit to the school's computer lab, using a literature-based website (www.tcom.ohio.edu/books/kids.htm) which included nine of Potter's works. The lab instructor introduced the website to the class. Additional computer time was available on three classroom computers. Students served as peer coaches. Participants read two of Potter's e-books and selected two graphic organizers from among five choices of varying complexity for a four-page booklet.

Results and Conclusions

Students completed two teacher-selected organizers based on *Peter Rabbit*. They selected two of the remaining five organizers; although they were encouraged to use the second story at least once, all reported on *Peter Rabbit* exclusively. Each organizer was selected at least once. Although students were allowed choice in the tasks they designed for the organizers, all participants elected at least one character analysis. Other areas of interest included story sequencing, setting analysis, plot analysis: Peter's problems, and vocabulary development. Peer coaches aided with computer use and with selection and use of organizers. Future replication of the project will include a change in the use of the two assigned organizers. The story map will be assigned for one student-read book and the story sequence organizer for the other. *Peter Rabbit* will be used for modeling only.

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Information and Communication Technologies for Mother Tongue Education

Mabel Encinas S.
Centro de Informática y Educación
Universidad Pedagógica Nacional
México
mabel@upn.mx

Abstract: This poster demonstration will show different learning activities for mother tongue education using information and communication technologies from a communicative perspective. The demonstration will show video, audio and the writing process for the students. This paper gives an overview of the project and offers a list of resources used in the project to be shown.

Sec[21] Project: information and communication technologies in secondary education in Mexico

Sec[21] is a national project that promotes and supports the use of information and communication technologies (ICTs) for teaching and learning in secondary school (junior high school). Sec[21] means secondary for the XXI century and suppose the integration of two components to regular activities: video and informatics. They are implemented through a local area network with (a) two servers, one for digital video, the other one for telecommunication and other facilities sharing, (b) computers and televisions in each subject room, and (c) one or more computer laboratories. The project has developed materials and courses for some of the subjects, particularly mathematics, physics, biology, geography, history, civic and ethical education, and Spanish (mother tongue) and offers some specific equipment or materials in each particular subject. For example, programmable calculators are offered for mathematics or audio materials for Spanish language. The national project includes the technical support for the initial installation and training for the personal in the school, including principals and teachers of all the subjects involved.

In Spanish language the activities and materials are design within a communicative and functional perspective to allow the participation of students for the development of communicative competencies. The videos are less than ten minutes long and offer mini-classes, propose activities or can be used inside an activity developed by the teacher for written or oral activities. The audios are less than three minutes long and can be used in several ways. There are two series: *Sec[21] for the (stand up) ears* (a play on words in Spanish) and *Voices of the literature*. In the informatics component, the proposal offers activities for using the word processor for writing, the presentation generator for supporting students' conferences, the navigator for visiting selected sites on the web for supporting initial research activities, the sound recorder for oral activities and the local area network for sharing products.

The resources to be shown

The demonstration will show up some videos, some audios and the strategies for integrating the work in the classroom with the work in the media classroom. The strategies include the computer accessories and general-purpose software, the local area network facilities, and Internet resources.

Teacher Education for Mother Tongue Teaching and Learning Using Information and Communication Technologies

Mabel Encinas S.
Centro de Informática y Educación
Universidad Pedagógica Nacional
México
mabel@upn.mx

Abstract: This paper presents the teacher education process inside a project that uses information and communication technologies for mother tongue teaching in secondary school (7th to 9th grades) and the research project that is starting. The paper has three parts: an overview of the development project, the teacher education process inside the project, and the research project. The development project is founded on a communicative and functional perspective on language teaching, according to the national curriculum in Mexico. The materials developed in the project include video, audio, and integrated activities between the Spanish classroom and the media laboratory. The teacher education process has been face to face, with some support by e-mail. The research is oriented to the comprehension of how do teachers appropriate of information and communication technologies for mother tongue teaching.

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Teacher Education

Teacher education in the project has been has not been very successful, particularly because of the duration. The local support varies from state to state, although in some of them there is an effort on supporting *in situ* and the central team efforts have not been enough to follow teachers' processes of learning. Therefore teachers do not use the equipments and materials with the frequency expected or even do not use them at all.

The training they receive lasts two days and, generally without a focus on the use for language teaching and learning.

The Research Project

The question to which the research aims to answer is: How do teachers appropriate of ICTs for mother tongue teaching? The sense of the term "appropriation" comes from the sociocultural perspective, as we will see below. The central question involves many other questions like: How do teachers use ICT's? How do they interpret their activities? How do they explain their work? How do they organise the work in the classroom and in the media classroom? What kind of a community do they integrate, if they work inside isolated classrooms? How do they perceive themselves as teachers? How do they participate in the processes of change? How do they learn in all these processes?

The approach will be qualitative, this means in depth investigation of the processes of teachers participation in the school, teaching mother tongue and using ICTs. The case study will focus on a group of teachers that integrate one school in one turn. In this way, as "the case is studied in its own right" (Robson 1993) the project does not aspire to arrive at generalisations. On the contrary, it will intend to have a depth understanding of a school community and of the ways in which each individual person participates in it. The readers of the results will make "generalisations" or comparisons with their other "cases".

For approaching to school, sociocultural perspectives, particularly activity theory (Engeström et *al.*, 1999), offers a starting point to the comprehension of teachers' actions in context, and the process of teachers' appropriation of ICTs for teaching mother tongue in secondary school. On the one hand a sociocultural approach allows researchers to transit from the social to the individual in two senses. Firstly, this perspective do not isolate the individual subjects, reduce the subjectivity to biology or mental activities, nor attribute to them a sense of omnipotence on the context in which they act. Secondly, this standpoint can explain how the agent acts in a context that opens a limited number of options among which the individual subject decides. In other words, the conditions in which the individual or group moves has two aspects: opening possibilities and setting up limits to action. The agent is not only determined by the situations. However change is not a process from willing, but a process where different perspectives, dependent on the own place in the social context, interplay to construct options. In this way, the starting point for the understanding of human beings, and specifically of teachers' processes of changing, remaining, learning, felling willing, engaging, being creative: acting in the world, would be the processes of participating in communities of practices (Wenger, 1998). Particularly, teachers act in the social world of the school and in the particular social world of the communities to whom each school serves.

The concept of appropriation, the social comprehension of learning (Newman, Griffin et al. 1989), implies two aspects of the same process (Cole et al, 1999). The first one is that the subject appropriates something that does not belong to him / her in the first moment. In the case of the teachers, they have to make computers their *property*, which means to make them useful tools for their activities. However, to make this possible, they need to make them appropriate, adequate, to their own purposes. This aspect of appropriation implies the transformation in use of the tools they "receive". Thus, the process of appropriation of a tool is an active process. This active process is what is going to be investigated.

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Giving a "Hand" to the Writing Workshop with PDAs

Candace Figg
College of Education
University of Louisiana at Lafayette
United States
cfigg@louisiana.edu

Jenny Burson
College of Education
University of Texas at Austin
United States
jenny_burson@teachnet.edb.utexas.edu

Abstract: Lack of student access to computers in the classroom (or lack of adequate computer lab access) has limited the computer's usefulness in the writing process to the "publish" stage. Although publishing an attractive, professional-looking document as a result of the writing process is important to the development of good writers, it should not overshadow the real need--developing thoughtful writers who can appropriately use technology during the revision process. Teachers of writing understand that the real work of the writing process comes during the creative brainstorming, drafting, editing, and re-writing stages. Handheld PDA devices may hold the key to integrating technology into the creative work of the writing process.

Introduction

Surveys regarding the current state of technology use in classrooms indicate two important facts. First, although more students have access to computers, either in the classroom or at home, than ever before, 78% of classroom teachers still view access to computers in the classroom as a barrier to their efforts to integrate technology into their daily teaching practices (U.S. Department of Education, 2000). Secondly, teachers who do use technology within their instruction most frequently assign the use of word processing technologies to their students for purposes of keyboarding and formatting their writing projects (Becker, Ravitz, & Wong, 1999; U.S. Department of Education, 2000). The challenge, then, to educators responsible for providing preservice and inservice teachers with the skills necessary to infuse technology into their daily teaching practices is to provide teachers with options to overcome the access barrier as well as inform them of practices that strengthen writing skills of students throughout the writing process, not just during the final publication stage of keyboarding and formatting writing projects. Meeting this challenge may have received a helping "hand" with the recent drop in prices of the Personal Digital Assistant (PDA), a handheld device that allows a portable and relatively inexpensive means of gathering, recording, and organizing information into meaningful forms of communication. For under $200 per student, the teacher is able to provide a student with a PDA and a keyboard that will enable the student to take notes, jot down ideas, record thoughts, memories, words, and responses to readings/experiences, and collect "scraps" of life that can later be used for writing purposes--all of which are important procedures necessary to the writing process. This paper will explore the Writing Workshop, a process of teaching writing that has gained acceptance throughout the United States as an authentic means of not only teaching the art of writing but creating a community of writers, and will demonstrate how the use of PDAs within this workshop approach enhances the establishment of conditions necessary in the creation of student writers.

The Writing Workshop: The Process

Lucy McCormick Calkins has stated that the student act of creating written pieces in the classroom is often "little more than a place to display--to expose--(students') command of spelling, penmanship, and grammar," rather than a process of growing meaning from "real, human reasons to write" (Calkins, 1994, p. 12, 13). The use of the Writing Workshop to provide students with opportunities to view the world with a "writer's eye" and develop those views to express ideas and communicate perceptions to others is a powerful and authentic learning experience designed to develop students who view themselves as writers. The writing process then becomes an important part of participating in a learning community. Briefly stated, the Writing Workshop is structured

so that a block of 30-60 minutes (two to five times a week) is scheduled on a regular basis for students to write on projects of their own choosing. During the writing block, students work independently on pieces of writing in various stages of progress according to the writing process, share this writing with peers through participation in small group peer review sessions, participate in individual teacher-author conferences, and listen to tips or writing strategies shared by the teacher as "mini-lessons." An essential ingredient for the success of the Writing Workshop is for the students to understand the writing process: the cyclical processes of prewriting, drafting, revision, and editing, that are the necessary stages of development in taking a piece of writing from an idea, memory or thought bouncing around in the head of the author to the published finished product.

The PDA and the writing process

Introducing the PDA into this workshop experience is a true illustration of seamless integration in which the technology not only supports the learning experience, but also enhances the process. For example, the initial stages of the writing process, called prewriting or rehearsing, involve the collection of ideas, the jotting down of memories, thoughts, or words, brainstorming things to write about, drawing pictures or collecting pictures that the individual likes, doodling, making lists, reading aloud, talking to others, and capturing thinking responses to readings or experiences in text notes. These kernels of thought may or may not find their way into a writing draft, but the collection process is crucial to the foundational development of the idea that writing evolves from life experiences, not from the story starters or motivational activities supplied by the teacher. Experts in the field of writing and authors who have written about their writing experiences, such as Donald Graves, Lucy Calkins, Betsy Byars, and Donald Murray, suggest gathering these ideas into a "container" such as a notebook, journal, box, or file that can be carried with the author as they go about their daily experiences. This is the basic purpose of the PDA. The note taking capabilities through such software as Memo Pad, TakeNote!, Thought Manager or word processing applications, such as QuickWord, FreeWrite, or Documents to Go, allow the individual to make such collections easily with the added capacity of organizing these files into categories for later retrieval of files on the same topic—the next necessary step in the process of topic generation.

In addition to helping students collect and organize their thoughts and bits of writing into categories, the PDA can support the student's need to visualize the relationship between the topic once it is chosen and possible subtopics through the use of concept mapping tools, such as PicoMap. The limitation of screen size for mapping purposes creates a need for the student to visualize no more than three to four possible relationships or subtopics to the central topic, which in many cases, is an appropriate management technique for leading the student from collection of related "bits" to understanding the relationships between the "bits" and writing about those relationships.

Even the drafting process is enhanced for beginning writers with the use of PDAs because often students new to the writing process are more concerned with the way the text looks on the page than getting the ideas recorded. Viewing the text on the small screen focuses the writer's attention on the text and its meaning rather than the way the text looks as it shapes into a paragraph. And, the use of formatting tools in most of the word processing applications for the PDA is limited to Cut, Copy, Paste, and Delete, which allows the student to use the power of the word processor to move and re-arrange text as needed for clarification of expression, but prevents the student from "making the page look neat" or inserting cutesy graphics and WordArt. As student writers mature in their abilities to concentrate on and value the process of drafting thoughts into cohesive statements, the need for focus becomes less of a concern; however, the use of the PDA for drafting purposes remains valid.

And, finally, the sharing of writing with others is an integral part of the workshop experience. Participants in the workshop share drafts of stories, poems, and thought pieces with other individuals or small groups or in conferencing with the teacher, soliciting feedback, encouragement, and suggestions for improvement. The PDA supports this process by making it simple for participants to share files by beaming the draft file from the author's PDA to the reviewer's PDA. Reviewers are then able review and comment on the piece, and beam the file back to the author complete with added comments and suggestions.

Conclusion

For teachers interested in integrating technology seamlessly into their daily practices, the challenge remains how to use the technology so that the tools become an invisible support structure for the learning process. The use of PDAs within the writing process of the Writing Workshop is indeed an instructional design that builds upon the natural learning processes and scaffolds the learning processes in ways appropriate for the technology. In addition to the appropriateness of the technology to the learning process, the ability to provide all students with the technology in a relatively inexpensive manner addresses the desire of teachers for all students to participate in the learning experience in the same way. Pretty handy!

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Software Resources

FreeWrite and *PicoMap*, created by the Center for Highly Interactive Computing in Education at the University of Michigan, available for free download at http://www.handheld.hice-dev.org/download.htm.

QuickWord, available from Cutting Edge Software at http://www.cesinc.com/quickword/

Documents To Go, available from DataViz at http://www.dataviz.com

TakeNote!, available from Landware at http://www.landware.com/takenote/

ThoughtManager, available from Hands High Software at http://www.handshigh.com/index.html

Evaluation of an Instructors' Training Programme from the Instructors' Point of View.

Hara Giouroglou, hara@uom.gr
Anastasios Economides, economid@uom.gr
University of Macedonia,
156 Egnatia, 54006 Thessaloniki
Greece.

Abstract: In the premises of the educational reform across Europe, many countries have funded teacher training programmes regarding the integration of the Information and Communication Technologies (ICTs) in all areas of the curriculum, in the primary and secondary education sector. Apart from the infrastructure required, it is essential to focus on the human resources of education and to train teachers in order for them to acquire the skills necessary to integrate ICT into their courses and help their students attain knowledge in a constructivist way. Greece is also fostering educational reform and is running a number of projects towards this direction. One of these projects, EPENDYSH (http://www.ithaca.uom.gr) aims – among other things – in the postgraduate training of 40 secondary education teachers of all disciplines, who will be distributed to schools in order to train their colleagues. They are being trained to use ICT in the teaching of their subjects. The paper firstly states the overall philosophy and main issues regarding teacher training on ICT. We support a constructivist approach to teacher training, focusing on the training of a sub-group of trainees, teachers of foreign languages. The aim of this paper is to present the attitudes of this sub-group, based on the results of a questionnaire handed to them after completing their training at the University of Macedonia (http://www.uom.gr). It is therefore desirable to investigate how successful the actual training was viewed by teachers of foreign languages, whose subject matter is not affiliated with computing and computer science. These results are subjected to further discussion for future improvements on teacher training.

INTRODUCTION

Information and Communication Technologies (ICTs) have become indispensable in all educational environments. Firstly, ICTs have changed the way people access and process information. Nowadays, information is not a static entity, given 'as such' to those interested, but it is dynamic, ever-changing, characterized by diversity and subjectivity. Knowledge is not built behavioristically, but it is a cognitive process built constructively that includes searching for information and evaluating it in order to solve problems. Students have access to an open bank of knowledge and information that needs critical thinking skills in order to be fully exploited. Secondly, ICTs have opened new communication channels, both synchronous and asynchronous, for students, teachers, administrators and parents, which are global, multicultural and multilingual in nature. To keep new generations up-to-date with these developments, major changes need to take place in public schools regarding the integration of ICTs in all curriculum subject-areas. Apart from the infrastructure required, it is essential to focus on the human resources of education and to train teachers in order for them to acquire the skills necessary to integrate ICTs into their courses and help their students attain knowledge in a constructivist way. It is therefore the aim of this study to investigate how successful current initiatives in teacher training are from the teachers' point of view and particularly from teachers of disciplines that, though not affiliated with computer science, are highly promoted and enhanced by ICTs, such as foreign languages.

TEACHER TRAINING

Apart from equipping schools with the appropriate infrastructure, it is mutually important to affiliate the staff with the suitability and usability of ICTs in education. Teachers need to believe in the supportive use of technology, in order to fully exploit the capabilities of ICTs and motivate their students to actively participate in the learning process. Similarly, teachers need to acquire the computer skills necessary in order to be able to operate ICTs. Finally, teachers need to develop an autonomous approach to life-long learning and construct their own understanding from the stimuli and experiences they gather from their immediate environment.

Current European initiatives [1,3,5,7] invest billions in teacher training (TT) and have common grounds and objectives. The organisation, the content, and the outcomes of a TT course are of major importance and different trends seem to exist. Especially in the field of course content, there is rivalry

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between those persisting in the instruction of educational packages and those following a more 'open' training strategy [4].

We assume that the teachers' objective should not be the mastering of one or more computer programs but the development of critical thinking skills and global perspectives on educational technology. The teacher should not be a passive recipient of new knowledge but he/she needs to be actively enrolled in the learning process. Therefore, as long as the training takes place, the trainee should assume the role of the learner in order to develop the thinking skills required to act in a constructivist way. A TT program as such should include courses from the disciplines of Education, Educational Psychology, Informatics, Learning Theories, Computer Networks and e-Learning, and should prompt the trainees to critically interrelate and construct the knowledge acquired by each discipline in conjunction with their prior experience and their students' needs. Thus, teachers will be able to consciously identify their target group's needs, in order to adapt new technologies to their schools/institutions. Similarly, the optimal assessment tool for teachers should be project-based in the form of authentic case studies or problem-solving activities that trainees need to explore, process and evaluate in order to propose possible solutions.

Specifically, regarding the training of foreign language (FL) teachers, we propose the following strategic points. The theoretical academic background of FL teachers necessitates initiatives that increase teacher motivation and teacher attitude, and promote technical expertise. It is generally accepted that the teacher's attitude is a central element and it is highly influenced by the lack of technical knowledge [6,14]. This fact is partly due to a certain degree of technophobia among those teachers who share a positive view towards new developments but lack the technical knowledge and infrastructure to practice computer skills. What is therefore highly suggested, is substantial, high-level TT as well as the providence of a PC to each trainee for home practice. TT programmes need to focus on both directions and promote teachers' attitude as well as ICTs actual use. However, TT in ICTs should always preserve its pedagogical orientation, as the ultimate goal is not to build computer experts but 'IT Pedagogy specialists' [8,13].

Finally, TT initiatives need to focus on their own target group needs, considering variables such as trainees' nationality, cultural background, age, computer literacy, and target areas of interest (higher, secondary, or primary education). Trainees' attitudes regarding the training program's success can be officially measured by means of interviews or questionnaires. Though numerous similar TT programs are currently running worldwide, the methodology used and the needs that ought to be covered are literally depending on the aforementioned variables and may be divergent.

To sum up, we propose that TT initiatives should focus on a specific target group, such as 'FL teachers from the Greek secondary education sector'. In this case, the structure of the program proceeds as follows. In the first phase, trainees focus on basic computer and Internet skills, while at the same time they rehearse some major educational subject areas (e.g. methodology, learning theories, curriculum design). In the second phase, they proceed with the e-learning philosophy and principles, focusing on Computer Assisted Language Learning (CALL). Parallel to this, they learn authoring skills, and the use of authoring tools. Finally, they should be given adequate time for practical training, in order to become dynamic participants instead of passive recipients. Overall, teachers need to develop a new philosophical perspective and a flexible pedagogical approach, rather than confine their training in the operation of ready-made packages.

THE PROJECT

Greece, together with the rest European countries, runs a number of educational projects focusing on three directions: construction of fully equipped computer labs in public schools, development of educational software and TT [10]. The project EP.E.N.D.Y.SH (Training of Trainers in the Modern Network and Information Systems) focuses on the third direction and provides one-year postgraduate training courses for in-service secondary education teachers, who are trained to provide in-school training for their colleagues. In 2000, the University of Macedonia undertook the postgraduate specialization of 40 teachers from the following disciplines: Computer science, mathematics, FL, and economics.

The training programme consisted of 'horizontal' tutorials to which trainees (Ts) of all disciplines were participating and 'vertical' training for trainees of each discipline separately. Specifically, the FL domain received 72 hours of vertical training that covered theoretical and practical tuition.

METHOD

The Trainees (Ts)

The Ts of this study were five FL teachers who were selected on the basis of their 'personal qualities [and] intellectual abilities' [9] regarding their background, teaching experience, postgraduate studies and involvement in pedagogical activities, that was viewed in their 'expression of interest' application form and during a personalized interview. Their age spanned between 30 and 50, while their affiliation with new technologies before the programme ranged between very good and average. Therefore, we assume that they were motivated to participate in this programme, due to the fact that they were responsible of expressing interest and they were computer literate, at least at an initial stage.

The Questionnaire (Q)

The Ts' training at the University of Macedonia officially ended with a graduation ceremony on 27 June 2001, the date when the questionnaire (Q) was handed in. The Q was structured on the basis of Q construction standards in the field of educational research [18]. It had four sections that were comprised of 31 closed-ended questions and one to three open-ended questions at the end of each section. The over-use of closed-ended questions was due to the fact that they produce more accurate and measurable results, and they do not require long time to be completed by the Ts avoiding the Ts' loss of patience or frustration and the resultant improvised completion of the Q. The questions were short, direct, carefully structured and focused on one topic, in order to avoid ambiguity and to ensure that Ts fully perceived the author's queries. The first three sections regarded the quality of the lectures during the 'vertical' training, the quality of the learning materials and the evaluation of the expertness gained by the Ts, and they had five scale point closed-ended questions. The last section dealt with the trainees' capability to instruct other teachers in ICTs and had three scale point closed-ended questions.

Results

The first section asked Ts to evaluate the knowledge they gained from the 'vertical' lectures regarding the pedagogical use of the ICTs in FL teaching. The overall impression was good. The Ts declared that they received good training in the subjects 'General Teaching Principles', 'FL Teaching Models' and 'Special Teaching Problems per Language' but they also stated an average to poor level of competence gained from the lectures on 'The Use of Multimedia in FL Teaching' and 'Teleteaching of FL', which are the subjects that directly apply to use of ICTs in language learning (LL). In the open-ended question that followed and regarded recommended changes, the Ts stressed the fact that they were not taught *Xenios*, an e-slate learning environment and authoring tool, developed by the Computer Technology Institute [2] in order to be taught to in-service FL teachers and to be distributed to all Greek secondary schools. In a privet talk with the Ts, we noted a feeling of insecurity regarding their competence in training other teachers on the specific piece of software without having initial training on it themselves. One trainee characterized as 'loss of time' the instruction of old authoring programs, such as *WIDA*, and suggested a more 'up-to-date' approach, while other Ts stressed the absence of model teaching scenarios that integrate ICTs. This attitude is indicative of the fact that the Ts showed an implicit indifference regarding the general pedagogical values of ICTs in education and the history of educational technology. Instead, they complained that they were not trained on a specific piece of software and they were not given ready-made teaching scenarios. We deduct that our Ts were not in a position – or did not want – to function autonomously and constructively.

The second section dealt with the quality and quantity of the learning materials presented and offered to the Ts. Three types of materials were presented and evaluated: printed materials, software and web-based software. Ts were trained in how to use, integrate and evaluate such learning materials. As regards the materials' quality, Ts' opinions were divergent. According to the them, the quality of printed materials ranged from very good to average and the quality of software from good to below average. The web-based software together with the overall estimation regarding materials' quality was evaluated as average.

Concerning the quantity of learning materials, the Ts agreed that they received a satisfying amount of printed materials, but their opinion on software and web-based software quantity ranged from good to below average. In the open-ended question, asking Ts to identify the best piece of software that would be serviceable in the Greek secondary education sector, they all named *English Discoveries* and *Xenios*. This unanimity in an open-ended question is indicative of the fact that either the Ts did not receive training on a large number of foreign language teaching packages or they only focused on the very limited number of the packages that were going to be distributed to public schools.

The third section of the Q measured the degree of attaining the objectives of the programme and specifically the skills acquired on the general use and integration of ICTs in a FL environment. The Ts considered as average the skills they acquired in multimedia applications, pedagogical applications of

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the ICTs and strategic pedagogical planning. In the open-ended question, they stressed the necessity for more hours of training in the above areas.

Regarding ICTs integration in the FL environment, the Ts had divergent opinions. Answers ranged from good to below average regarding the skills acquired in the production and development of ICTs-supported language activities, in the design and support of interactive LL activities and in the selection and evaluation of the appropriate CALL materials. However, the Ts considered that they received good theoretical tutoring and good to average 'hands-on' training. On the whole, we assume that the Ts admitted receiving good training, but they tended to be skeptical when it came to specific subject areas.

The last section of the Q dealt with the level of the Ts' ability to transmit the expertise they gained to their colleagues. This section had unanimity, and all Ts answered that had acquired the skills needed to inform, motivate and familiarize their colleagues in the use of ICTs in education, as well as to train their colleagues in ICTs integration and in the design of electronic or web-based learning materials. Thus, if we exclude some degree of dissatisfaction regarding certain areas of the training, we can assume that the TT project managed to develop competent teacher trainers, that are conscious of the knowledge they gained and feel competent to deliver it to their colleagues.

At the end, there were three open-ended questions in order to investigate the Ts' overall opinion on what went well, what went wrong, and what changes should be considered for the future. To sum up, Ts praised the computer lab, which was designed and equipped to fulfill the needs of the particular group, and stressed how facilitating the spirit of cooperation among them was. Discussion, questioning and ideas exchange between people of the same status can accelerate the process of turning the outside stimuli into acquired knowledge. To this end, some teamwork projects were extremely helpful.

The lack of homogeneity regarding the Ts' level of computer literacy frustrated all of them, as the less competent could not easily acquire what they were being taught, whereas the more competent felt hindered to proceed to more advanced activities. Apart from that, the Ts criticized the great emphasis given to informatics, which, as they claimed, impeded the saving of extra hours dedicated to subject-specific aspects.

FUTURE CONSIDERATIONS

Based on the aforementioned results, we can draw up some conclusions for future FL TT initiatives. The relatively high degree of divergence is mainly due to the fact that all Ts received the same training, regardless of their level of computer literacy at the beginning of the course. Therefore, the Ts perceived the training course differently, according to their prior experiences and computer competence. This problem has been also noted in other similar programmes [11]. One solution could be to split Ts in groups on the basis of their computer competence. Yet, the small number of Ts per subject matter prohibits such initiatives. For this reason, it is preferable to offer extra hours of optional training as well as to provide all trainees with personal computers for autonomous training. Finally, TT courses need to administer constructivist group-work projects that will give Ts the opportunity to exchange ideas and share their own understandings with their colleagues, in order to have gains from each other's knowledge.

Additionally, in order to avoid the Ts' frustration and insecurity, their training should include model teaching scenarios that integrate ICTs in the educational process. Ts will thus feel more competent to train their colleagues. On the other hand, Ts should also be exposed to numerous educational software packages in order to be able to think critically, make their own judgments and learn how to evaluate, compare and contrast existing and future electronic learning materials. To accomplish this, TT programmes should also invest on learning materials and equip TT labs with relevant resources. They also need to create a library sector with print learning materials, stand-alone software, networked software, journals, case studies, and worldwide research project deliverables, in order to keep the Ts and the staff up-to-dated with new developments.

Moreover, TT initiatives should dedicate equal number of training hours for both technological and pedagogical aspects. It is important for Ts to develop a deep understanding of the actual effects of ICTs in the learning process. In order to familiarize Ts with the use of ICTs in education, TT programmes could also integrate ICTs for course delivery. Telematics and computer-conferencing systems can help to this end, as they can guarantee synchronous and asynchronous learning as well as autonomous and group work. Ts will then be able to evaluate these systems from the learner perspective.

Finally, we believe that every new TT initiatives should be tailored to its target group's needs. Collecting and implementing ideas and findings from similar projects is also legitimate but it needs careful selection and monitoring, based on the current situation. Though TT courses have some

parallel attributes, there are also culture-, country-, infrastructure-, subject-, and trainee- specific variables that explicitly affect and determine the outcomes of such initiatives. We strongly advocate trainee needs analysis and careful budget management.

CONCLUSION

The aim of this study was to investigate the degree of success of the one-year foreign language instructors' training programme on ICTs in education at the University of Macedonia, according to the trainees' point of view. The results were gathered by means of a questionnaire handed to them at the end of the course. We assumed the subjects' motivation from the fact that they expressed interest for participation in the programme. In total, the results showed that the course fulfilled its main objective, which was the successful training of in-service instructors from the secondary education sector in order to train their colleagues. The subjects declared that they felt competent to instruct other teachers on how to use and integrate ICTs in the classroom, and how to design and evaluate learning materials. However, they also criticized some aspects of the course and suggested future changes, which can be taken into consideration for the next group of trainees. Therefore, we aspire to optimize the instructors' training course not only by keeping up-to-date with current international initiatives and studies but also by actively focusing and adapting our programme on the specific needs of our target groups of trainees.

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NEXOS - A Language Portal for Cultural Learning and Collaboration

Josef Hellebrandt, Santa Clara University, US
David Armstrong, Santa Clara University, US

Foreign language teachers have been lacking an open web platform in support of learning and collaboration. This interactive session introduces participants to NEXOS, a web language portal for teachers and learners of Spanish. It will be facilitated by a Spanish professor and an instructional resource expert, who will familiarize the audience with the main features of NEXOS as well as its pedagogical and technological aspects.

The main goal of NEXOS is to promote learning exchanges among university students, teachers, and community members in the US and abroad through shared cultural information and resources. Traditionally, schools, colleges and universities have been offering Spanish teaching and learning in a top-down fashion to the student or to the community. Only recently have Spanish teachers begun to re-evaluate the focus of teaching and to explore colloborative learning formats using technology. The key features of NEXOS--a database-driven platform and multiple communication and collaboration channels--will dramatically enhance technology-enhanced collaborations. It is designed for the sharing of a variety of resources among users and contributors around the globe, specifically for the education community.

The NEXOS portal supports three types of resources within its data banks: images, audio/video and general resources. The latter consists of links to information that can be found in the community and on the web, as well as information posted by NEXOS members on a variety of categories and types including: Events, Organizations, Teacher / Student Resources and much more. In addition, it allows for Real Video and web-based graphics. Members of NEXOS can communicate with other members of this portal via its Webboard or through topic-specific mailing lists.

Both design and usage of NEXOS support numerous learning outcomes, which aim at:
1. enhancing student learning about cultural products, perspectives and traditions
2. engaging campus and off-campus groups in mutual collaborations
3. promoting learning and professional collaborations among students and teachers
4. increasing access to technology
5. establishing electronic communication as a viable form for university and community collaborations.

The project will be made available to the membership of The American Association of Teachers of Spanish and Portuguese in November for evaluation including a request for possible modifications.

Electronic Writing and Workplace Literacy

Heather Hemming
School of Education
Acadia University
Canada
heather.hemming@acadiau.ca

Sonya Symons
Department of Psychology
Acadia University
Canada
sonya.symons@acadiau.ca

Lisa Langille
School of Education
Acadia University
Canada
014639l@acadiau.ca

Abstract: Askov and Gordon (1999) recognize the need to write effectively in an electronic context as important to literacy programs. The goal of situated learning is to create a context that is meaningful and relevant. When an instructional approach is developed based on principles of situated learning, instructors acknowledge the fact that adult learners bring already existing knowledge and skills to workplace literacy programs. Askov and Gordon (1999) suggest that the integration of work-related materials and instruction in basic skills builds on workers' background of experience and knowledge while developing their abilities to use communication and computational skills more effectively in the workplace. This paper discusses the importance of integrating electronic writing into workplace literacy programs, describes an approach to instruction based on reciprocal teaching, situated learning and strategy instruction, outlines the data analysis process used to assess the impact of the instruction, and discusses the findings.

Introduction

The definition of workplace literacy is shifting to encompass much more than the traditional interaction with text, as the idea of text itself is continually transforming with the onslaught of new technologies; there is now an essential focus on written communication within the boundaries of workplace literacy. Heath and Mangiola (1991) suggest that literacy is a mix of content, process and context by differentiating between 'literacy skills' and 'literate behaviours'. Literacy skills they define as "mechanistic abilities that focus on separating out and manipulating discrete elements of text" (p.40), while literacy *behaviours* refer to being able to "communicate ... analy[se] and interpret ... through extended text .... [They are] ways of going about learning that treat language as both the mediu m and the object" (p.40). This distinction is central to this study; by concentrating on improving electronic writing our goal was to focus instruction on literate behaviors and literate skills that may be necessary in the workplace.

Writing in electronic spaces has changed most workplaces. For example, the impact of e-mail has recently overwhelmed the workplace. A poll conducted by Kopp (1998) estimates that ninety percent of large companies, sixty-four percent of mid-sized companies, and forty-two percent of small firms currently use e-mail systems. The same poll found that more than forty million employees correspond via e-mail, and the number is expected to increase by about twenty percent each year. In addition to the significant presence of e-mail in today's workplaces, there has been an escalation in the use of electronic discussion in

many environments (Bonk, Appelman & Hay, 1996; Hemming, 1999; Kuehn, 1994; MacKinnon & Hemming, 1998). Electronic discussions provide adult learners with opportunities to reflect, pose questions, and examine problems (Brett, Woodruff & Nason, 1997). Given the growing need to be able to communicate effectively, exposing adult learners to computers is not sufficient preparation for the workplace. Communicating through the use of computers must be distinguished from simply using computers. Workplace literacy programs must be founded on research that focuses on understanding methods of teaching individuals to use literacy skills effectively within a technological context and to support the development of literate behaviors for interaction with electronic texts. In this research project we developed and examined an instructional approach designed to teach adults strategies for writing effectively in an electronic context. The instructional approach was developed based on a reciprocal teaching framework and the goal was to situate the learning within a meaningful work-related context through electronic discussions.

Reciprocal teaching has been used extensively in previous studies designed to examine the effectiveness of teaching cognitive strategies (Collins, Brown & Newman, 1990; Lysynchuk, Pressley & Vye, 1990; Palinscar & Brown, 1984). Results in many studies suggest that reciprocal teaching has potential to be an effective instructional approach to teaching workplace literacy skills (Rosenshine, Meister & Chapman, 1996; Spivey, 1995). Reciprocal teaching involves providing instruction over several sessions beginning with the instructor modeling strategic approaches to tasks. Gradually, from session to session, the instructor shifts more and more of the responsibility to the learners for using strategies. The gradual transferal of responsibility allows learners to ask questions, clarify the approach, and receive feedback before being required to complete the task independently. Reciprocal teaching supports an ongoing dialogue between student and instructor; various instructional strategies including teacher-led discussion, explanation, and modeling of strategy use may be effective ways of scaffolding participant attempts to employ the strategy.

Askov and Gordon (1999) suggest that because situated learning involves contextual instruction, based on real-world knowledge and experiences, it encourages transfer of knowledge and skills from the classroom to the job. To enhance the relevance of the writing strategies to the participants involved in this study, hypothetical case studies were created to reflect real-life situations and provided the context for the electronic writing. The cases were based on real-life issues that often surface within many workplace situations. Also, workplace settings found in local communities were used within the cases to enhance the relevancy of the material. The context of the cases enabled participants to explore important issues that often arise in workplace settings, bring and build on their prior knowledge and experiences, and increase awareness of various perspectives, which may encourage a re-examination of their viewpoints and beliefs with regard to many workplace situations and therefore enhance their ability to transfer their new way of thinking and problem-solving skills to future places of work and other areas of life.

Electronic discussion groups as a medium for writing has the potential to promote a collaborative writing environment. Further, Askov and Gordon (1999) suggest that computer-assisted instruction is one approach that educators may take to customize instruction to suit the needs of adult learners. To be prepared for the demands of electronic communication there must be opportunities to engage in writing within this context. Electronic discussions may provide an environment for more reflective responses as they enable participants to work at their own pace. Electronic discussions offer flexibility given their asynchronous capability; this makes the learning medium one that may be provided at a time when the adult learner is available and able to participate. Further, this environment allows learners to use their prior knowledge, reflect, and revise their writing within the context of an electronic learning community.

The Study

This study focused on the development of an instructional approach and the subsequent assessment of the approach used for teaching writing strategies important in electronic communication based on a reciprocal teaching model of instruction. Twenty-two participants, ages 18-48, at the Annapolis Valley Work Centre (AVWC) participated in the study. AVWC is an organization, which provides support to adults who have difficulty finding and/or maintaining employment due to various obstacles including academic, emotional, or behavioural barriers. Regardless of their unique challenges, all participants who

were involved with the study experienced varying levels of computer experience as well as difficulty with literacy skills.

Each participant completed a computer usage survey prior to receiving instruction as a method of gaining information regarding participant previous experience with computers and participant attitudes toward computers. In addition, to gather baseline descriptive data each participant was asked to complete a written sample based on the content of a selected case study, without the use of a computer. A baseline score was assigned to the written samples using a modified version of the TOWL. Basic computer instruction was provided to the participants using the IBM Thinkpads that they would continue to use throughout the study. When the participants felt comfortable using the laptop computers, they completed an introductory session prior to instruction, which involved making an entry into the electronic discussion group based on a case study. The instruction was based on a reciprocal model of instruction and consisted of eleven forty-minute sessions that focused on three specific writing strategies used when making electronic discussion entries. The instruction was also designed to situate the teaching and learning in context relevant to workplace preparation.

Throughout the instructional phase of the study, three sessions were designated to each of the three writing strategies: explaining/expressing a viewpoint, asking pertinent questions, and writing effective responses. Participants received instruction in heterogeneous groups during their regular class schedules at the AVWC. The first session consisted of an introduction to the strategy where the strategy was modeled; the second session (application A) involved participants working through the strategy with some guidance; during the third session (application B), participants used the strategy independently. Worksheets and study guides were provided to participants during each session, which were used as guidelines for making entries into the electronic discussion groups. Participants were also required to complete two additional sessions, which involved working through a case study using all three of the writing strategies. During the first of those sessions, participants received guidance and support from the research assistant while participants used all three strategies independently during the second session.

After the instructional phase was completed, all data collected throughout the study was archived for analysis. In addition to the computer usage surveys and written samples completed prior to instruction, the worksheets used during instructional phase and participant electronic discussion group entries were documented for later analysis. Additionally, detailed qualitative data was gathered throughout the entire phase of instruction.

Findings

To gain better understanding of participants' experience with computers prior to instruction, the computer usage surveys were examined. 15 of the 22 (68%) participants had used e-mail while 9 (41%) had used chat groups prior to this study. Only 3 (14%) of the participants categorized themselves as heavy computer users (many hours per day), another 3 felt they were light computer users (approximately once per week), and 3 of the 22 considered themselves to be infrequent users (rarely use the computer). These findings reveal that there was diversity among participants with regard to computer use. It is also interesting to note that although fifty-nine percent of the participants had used a computer within seven days prior to participating in the study, sixty-two percent of those participants had used a computer for playing games while only thirty-eight percent used a computer for word processing and forty-six percent for writing an e-mail message. These findings suggest that the participants enrolled in the workplace literacy program at AVWC do not frequently use computers for electronic writing when compared with using computers for entertainment purposes such as playing games. Further, only fifty percent of the participants used a computer for any purposes within the context of their workplace literacy program within one week prior to the study.

The overall goal of the instruction was to improve the quality of electronic writing with more specific goals of having the participants use the strategies taught while writing. To assess the change in writing quality after instruction, we compared the electronic discussion entries created during an introductory session to entries made during the final independent session. These data are summarized in Table 1. The number of words that participants used before and after instruction did not differ, $t(20) = 1.77$, $p = .092$. However, participants used an increased number of sentences after instruction than they did prior to instruction ($t(20) = 3.24$, $p = .004$). This suggests that writing processes were changing; it appeared

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as though participants started to make more thoughtful, planned decisions about their writing. Further, when comparing these two groups of entries it was also found ninety-five percent of participant entries showed an increased amount of explanation provided to support viewpoints generated. This data suggests improvements to participants' written communication; they were carefully explaining the viewpoints with regard to the cases rather than simply stating isolated opinions that were not relevant to the cases. The overall quality of participants' writing was compared using a modification of the TOWL. Results suggest significantly higher scores following instruction, $t(20) = 2.43$, $p = .024$. We also compared the explanatory quality of the arguments made by the participants on a 5-point scale. This reliable scale indicated that the participants' arguments were better after instruction than before, $t(19) = 12.58$, $p = .001$.

Measure		Pre-instruction	Post-instruction
Number of words in writing sample	M	79	68
	SD	(39)	(22)
Number of sentences in writing sample	M	3.5	4.9
	SD	(1.9)	(1.4)
Writing Quality (maximum 29)	M	19.2	22.3
	SD	(4.4)	(4.0)
Quality of Argument (maximum 5)	M	1.5	4.7
	SD	(0.9)	(1.0)

Table 1: Descriptive statistics of pre- and post-instruction writing measures

Specific to the goal of using the strategies in the electronic postings, we assessed participant worksheet/study guides to see whether there was evidence of strategy use. Ninety-five percent of participant entries revealed some evidence of using worksheets and study guides, which were important components of the strategy learning throughout the instructional phase.

Throughout this study, there was evidence of change in attitudes toward writing. At the beginning of the study, thirty-six percent of the participants specifically identified writing as a significant barrier for them with regard to finding and maintaining employment. During the pre-instructional session, which required participants to write in response to a case study without using a computer, eighteen percent of participant written responses did not accurately reflect thoughts verbally expressed within the group discussion. Many written responses were very brief, used basic words, contained unconventional spelling and letter formation.

There were additional changes in the participants' literate behaviours throughout the duration of the project. Participants began to think about their writing, as well as the conventions of writing particularly spelling, punctuation, and capitalization. For example, one participant stated that she now read her work "over and over again" to make sure that "it makes sense" before she published it. Further, participants began to use each other for resources in the process of writing. Also, when reading the entries of others, participants would often make editorial comments. As a result of this feedback, one participant gained increased awareness of the importance of spacing between words.

Conclusions

Computer exposure is not sufficient to prepare adult learners for the workplace. Communicating through the use of computers must be distinguished from simply using computers. Electronic discussion groups (EDGs) have the potential to promote a collaborative learning environment that enables learners of various abilities to exchange ideas and thoughts, extend their learning, and ultimately grow as a community of learners. Thus, electronic discussion groups may provide an appropriate learning atmosphere that allows for the diversity of adult learners enrolled in workplace literacy programs. If workers are to be prepared for the demands of electronic communication, instructional approaches must reflect the authentic process of

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communicating electronically to promote growth in the areas of literate behaviours and skills. Adult learners require an instructional approach that will address their diverse needs and will guide them to independent use of the various strategies learned so they can then be transferred to future situations.

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CoBaLTT! Content-Based Language Teaching through Technology

Marlene Johnshoy
Center for Advanced Research on Language Acquisition
University of Minnesota
United States
johns484@tc.umn.edu

Abstract: The CoBaLTT project includes two primary components: the delivery of a professional development program for K-16 world language teachers that will enable them to create content-based lessons and UNITS that incorporate technology in order to improve students' language proficiency; and the construction of a Web Resource Center for language teachers that will provide instructional modules based on the face-to-face instruction in the professional development component and additional practical resource "rooms."

The purpose of the **CoBaLTT** project is to provide professional development and practical resources for K-16 world language teachers in content-based instruction supported by appropriate uses of technology. The CoBaLTT project has two primary components: a Professional Development Program and a Web Resource Center.

Professional Development Program

The purpose of the CoBaLTT professional development program is to provide intensive professional development for world language teachers on the use of technology in the second language classroom to support and enhance content-based language instruction. Participating teachers gather authentic materials and create content-based lessons or units that motivate students to develop higher levels of proficiency and cultural awareness, thus enabling them to meet challenging standards.

Each year, a cohort of world language teachers is selected to participate in a year-long program that includes a week-long summer workshop and three two-day workshops during the academic year. The program focuses on:

- content-based curriculum development and teaching strategies,
- best uses of technology for teaching and learning,
- creation of authentic tasks that meet national foreign language standards, and
- assessment of student language proficiency and content knowledge through performance-based assessment.

The program begins with a one-week intensive summer workshop held at the University of Minnesota. The CoBaLTT summer workshop sets the stage for the program by helping teachers understand the theoretical principles that link standards with content-based language instruction and curriculum development. Participants also become familiar with selecting and using technology to enhance content-based language instruction.

We are currently in the third year of the professional development program. The 25 K-16 teachers in the current CoBaLTT program have completed the week-long institute in the summer of 2001. Support and additional learning sessions will be held three more times during the 2001-2002 academic year. Between sessions, participants are involved with developing lesson plans to be added to the website, offering feedback and suggestions to peers, and trying out new ideas with their students.

Web Resource Center

The CoBaLTT Web Resource Center serves both as an integral part of the CoBaLTT Professional Development Program and as a stand-alone learning resource for language teachers. The Web Resource Center has two main areas:

- instructional modules for language teacher professional development in key subject areas important to the CoBaLTT program
- practical resource rooms for teachers related to the topics in the instructional modules

The instructional modules support the face-to-face instruction, but will also serve as independent learning modules for those teachers who are not able to attend the face-to-face instruction with a cohort. It is intended that these instructional modules will eventually form the core of a credit-bearing independent learning course.

The instructional modules will include the following:

- National standards
- Content-based curriculum development
- Content-based teaching strategies
- Technology-enhanced instruction
- Performance assessment (connected to the Virtual Assessment Center)

The practical resource "rooms" will contain a large collection of practical resources for language teachers. These resources will support and expand both the face-to-face instruction and the online modules:

- lesson plan room has (many first and second .year cohort lessons/units now viewable)
- discussion rooms (Year 3 cohort is using a bulletin board to discuss readings)
- rubric room (connected to the Virtual Assessment Center)
- technology room

Please visit the CoBaLTT website modules and resources. Any comments or suggestions would be appreciated. **http://carla.acad.umn.edu/cobaltt/**

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Using Technology to Present Mathematics Lesson Plans That Integrate Children's Literature

Virginia Keen, Bowling Green State University, US

It is not uncommon for preservice early childhood/elementary school teachers to acknowledge having some level of mathematics anxiety. In an effort to establish a comfortable learning environment in which to both deal with mathematics content and learn good mathematics pedagogy, I assign the creation of mathematics lesson plans which integrate children's literature. By approaching the teaching of mathematics through the more attractive realm of the reading of stories to children, preservice teachers gain a sense of security in the planning of a mathematics lesson.

Students are required to present their plans to their peers in the mathematics methods classroom using some means of technology. The technology options range from chalk and chalkboard to a digitized whiteboard system, including a networked computer providing access to all University-keyed software. The students choose the level of technology they wish to use, just as they select the literature and mathematics content for their lessons.

Several students have chosen to put the ideas and knowledge gained through their program preparation in classroom technology to excellent use as they have developed presentations that capitalize on the power of presentation software like PowerPoint® and HyperStudio®. In addition, some have incorporated opportunities to use the digitized whiteboard (SMART® Board) to make their presentations more interactive. In this SITE presentation, I report on the experiences I have had with student products and, if possible, have a preservice teacher co-present, sharing the product they created as a part of this assignment.

The objectives of this session include:

1. Sharing a vehicle for getting students to use their learning from classroom technology course work in subsequent courses,
2. Providing an opportunity for colleagues to see examples of student work, using technology to show how students integrate children's literature in mathematics instruction, and
3. Initiating a preservice teacher into the professional world of conference presentation.

The intended audience is teacher educators, not restricted to those in classroom technology. The software of concern includes PowerPoint®, HyperStudio®, Inspiration®, SMART® Notebook, and AppleWorks® graphics.

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Preservice Teachers' Use of WebQuest to Construct Literacy Events

Kimberly Kimbell-Lopez, Ed.D.
Department of Curriculum, Instruction, and Leadership
Louisiana Tech University
United States
Kklopez@latech.edu

Abstract: Preservice teachers taking a Reading Methods course as part of their elementary program requirements were asked to complete a WebQuest on a topic of their choice. The students were shown how to create the WebQuest through use of Netscape Communicator, which contains the web page editor Netscape Composer. As part of the process, the preservice teachers incorporated elements of reading as well as other elements of the language arts.

Introduction

It has become increasingly apparent that teachers mu st enter the classroom with knowledge and expertise in the use of technology resources. In the *Report to the President on the Use of Technology to Strengthen K-12 Education in the United States* (March, 1997), the President's Committee of Advisors on Science and Technology stated that:

> As schools continue to acquire more and better hardware and software, the benefit to students increasingly will depend on the skill with which some three million teachers are able to use these new tools. In order to make effective use of educational technology, teachers will have to master a variety of powerful tools, redesign their lesson plans around technology-enhanced resources, solve the logistical problem of how to teach a class full of students with a smaller number of computers, and take on a complex new role in the technologically transformed classroom.

A major point made by this report is that teachers currently do not receive enough support in the way of administrative, technological, or pedagogical resources. In addition, graduates of teacher preparation programs are not adequately prepared to use information technologies in their teaching. Subsequently, most teachersare left largely on their own as they attempt to integrate technology into their curriculum.

The National Center for Educational Statistics (Cattagni and Farris, 2001) reported that in fall 2000, 77 percent of classrooms were connected to the Internet. Developments concerning connectivity are especially critical when considering information reported by The United States Department of Education Office of Education in its Progress Report on Educational Technology. This report (November, 2000) stated that the proportion of teachers using the Internet in teaching continues to climb along with school connectivity from 65% in 1998 to 85% in 2000. With this increase in access to the Internet, there is a need for teachers to have explored potential uses of this resource within teaching and learning activities used in the classroom.

The International Reading Association's position statement on *Integrating Literacy and Technology in the Curriculum* (December, 2001) emphasizes that students must become proficient in the new literacies of information and communication technology in order to be fully literate in today's world. The role that teacher preparation institutions play becomes increasingly important, since the preservice teachers that are trained must be able to support these students in the development of new literacies. Teacher educators must integrate effective instructional models that use the Internet and other technologies into preparation programs in literacy education (IRA, 2001).

The Study

A major purpose of this study was to investigate possible ways to model the infusion of technology within classroom instruction using the WebQuest project developed by Bernie Dodge and Tom March out of San Diego State University (Dodge, 1997). Questions that were explored included: (a) What technical problems do preservice teachers encounter when using technology resources, and (b) How do preservice teachers incorporate reading and language arts curriculum elements when using the technology resources to develop an Internet-based Inquiry project (i.e. WebQuest)?

Participants

Participants in this study were twenty-three female preservice teachers enrolled in a Reading Methods class. This class was a course that must be completed prior to the student teaching component of their degree requirements. Students are usually around a junior level status when enrolled in the reading methods course. The university calendar is arranged in Quarters with classes taken in ten-week cycles, and this particular class met two times a week for one hour and fifty minutes each class for a total time of three hours and forty minutes. During weeks four through nine, students met on one of those class days at an elementary school to participate in the field experience component of the course.

Data Sources

Qualitative data collected for this project included the final WebQuest product completed by the students, a questionnaire, and email correspondence. Required elements for the final WebQuest product included pages that addressed the *Introduction*, *Task*, *Process*, *Evaluation*, and *Conclusion* (Dodge, 1997). In addition, the preservice teachers were asked to complete a three item questionnaire that addressed the following areas: (a) What was the hardest part about doing the WebQuest, (b) What helped the most during the process of creating the WebQuest, (c) Do you think the WebQuest is a good project to do with your students? Why or Why not? The preservice teachers were also asked to write a response to complete two open-ended questions: (a) I wish..., (b) If I could do it all over again, I would....

Introduction to the Project

Through their involvement in the course, preservice teachers were introduced to the concept of a "WebQuest" as a way to construct meaningful literacy events for teaching and learning activities in the elementary classroom. This model was developed by Bernie Dodge and Tom March at San Diego State University in 1995, and it is defined as:

> ...an inquiry-oriented activity in which most or all of the information used by learners is drawn from the Web. WebQuests are designed to use learners' time well, to focus on using information rather than looking for it, and to support learners' thinking at the levels of analysis, synthesis and evaluation. (Dodge, 2001c)

In order for students to have an adequate amount of time to create and develop the WebQuest, the project was introduced at the beginning of the quarter. Students explored *WebQuest Building Blocks* (Dodge, 2001), and a *WebQuest about WebQuests* (Dodge, Byles, and Brooks, 2001) to learn more about what is involved in the project.

Technical Aspects of the Project

Students entered the class with varying degrees of expertise and experience regarding use of technology. Many had not used any type of web page editor at all much less used such software to develop instructional materials for use in the classroom. In order for the software to be made available to all students, it was recommended that they use Netscape Communicator 4.7x. Since this is a free software program they could download to their home computer, which made it more readily accessible when working on the project. This software was also available in all of the computer labs on campus therefore accessing the software to work on the WebQuest project should not have been an issue.

Support Outside of Regular Classroom Instruction

In addition to class time where the project was discussed, a three-hour support session outside of regular class time was provided by the instructor for those students wishing to receive instruction regarding how to use the web page editor. Students also sought support through office visits with the instructor or through email correspondence.

Providing a Template as Support

Students were provided a working template on diskette that included already created "base" pages for: (a) *WebQuest Home*, (b) *Introduction*, (c) *Task*, (d) *Process*, (e) *Conclusion*, and (f) *Evaluation*. Each page also had a navigation bar with links between the pages. The purpose in providing the template was to help students concentrate on the curriculum component of the project versus becoming mired down in technical problems. Students had to still input selected graphics and links, so they did get experience in working with these technical aspects of the project.

Selection of Topics

The topic selection for the WebQuest was based on an area of interest or grade level range in which the preservice teachers were interested. Students were directed to the web site of Bernie Dodge, which provided a *Matrix of Examples* (Dodge, 2001a) of different WebQuests that were organized by contents and grade levels. This web site had been found to be a good resource in helping students narrow the instructional focus for their own WebQuest project.

Incorporating Reading/Language Arts

During the course of the quarter, discussion topics and activities in the Reading Methods course cover such skill areas as word recognition and identification, vocabulary, and comprehension. When developing the WebQuest project, students incorporate various aspects of these skill areas in to the learning activities. Since students were also enrolled in the Language Arts Methods course while enrolled in the Reading Methods course, they were encouraged to embed aspects of the language arts within the WebQuest project (i.e. speaking, listening, reading, writing, viewing, and visually representing).

Results

The preservice teachers had the option of developing the project individually or they could work with one to two partners. Five students chose to do the project alone, six other students chose to work in groups of two (three groups of two), and twelve students opted to work in groups of three (four groups of three). Students were free to select the topic and grade level for their Webquest. Grade levels that were targeted in these twelve projects included the following:

Table 1
Distribution of grade levels for WebQuest Projects

	Grade Levels			
Unidentified	3rd	4th	5th	6th
1	1	4	3	2

The topics selected by students for their projects were geared toward content area reading primarily in the area of science (10 of 12 projects). Topics selected included broad areas such as *Zoo Animals*, *Discovering Plants and Animals*, *Endangered Species* and *Introduction to the Solar System*. Some projects narrowed the focus to address topics that included *Creepy Crawly Spiders*, *The Bald and the Beautiful* highlighting the North American Bald Eagle, *Pumpkin Time*, *Only You can Build the Zoo* focusing on African animals and their habitats, or a specific city as in *Landfill Overload* or *Clean up your City*. Two projects had a social studies emphasis that targeted *Orville and Wilbur Wright* and *A New National Monument*.

Responses from Questionnaire

Two major themes that emerged from the analysis of the questionnaire included concerns with the technical aspects of the software and appreciation of support services. A minor theme noted included students wishing they had prior knowledge about how to create web pages.

Technical Aspects of the Software

Comments from students when responding to the questionnaire mainly dealt with technical considerations. Many considered the hardest part of the project was finding appropriate links and graphics to build into the pages of their project. Since Netscape Composer is a "bare bones" web page editor, it does not allow much room to manipulate such features as font size, placement of graphics, or to incorporate audio/video elements within the pages of the WebQuest. As a result, many of the problems encountered with the project were more technical in nature versus problems related to how to organize the teaching and learning activities incorporated within the actual project. Specific comments included notes about problems encountered in keeping the font style and size consistent,

getting the links to work properly, anchoring the graphics in a particular place on the page, or disappearing graphics. The biggest issue noted by students was the idea of learning how to use Netscape Composer while also learning how to incorporate effective elements of lesson design with the Webquest project.

Support services

Accessing support services was another theme that emerged from analysis of the questionnaire. The three hour support session provided outside of regular class instruction and the use of the template with navigation bar were found to be helpful to the majority of students. In addition, students commented on how helpful it was to use each other as a resource in areas that were technical as well as curriculum oriented.

Previous Experience with Web Page Design

Some students included comments in the questionnaire that indicated a wish to have had previous experience with web page design before actually developing their own WebQuest. Prior to taking teacher education methods coursework, students are required to take a general technology course that covers such areas as word processing, presentation, draw/paint, database, spreadsheet, and telecommunications. The depth that these areas are explored is usually dependent on the instructor of record. For example, those instructors having expertise and experience with web page design have required the development of basic web pages. Students who did not have instructors who considered this to be important, therefore would not have this previous experience before taking the Reading Methods course.

Analysis of Final Product

Analysis of the final WebQuest projects centered on the areas of reading that were targeted such as word recognition/identification, vocabulary, and comprehension. Each project was also analyzed to determine the types of activities that were included in reference to the language arts (i.e. reading, writing, listening, speaking, viewing, and visually representing.

Reading Skill Areas

The twelve projects created by the preservice teachers incorporated a variety of activities that included an emphasis on vocabulary and comprehension skill areas. In all of the projects, the vocabulary focus related to the content areaa topic or theme of the WebQuest. For example, the project on *Landfill Overload* included attention to the science vocabulary terms landfill, reduce, reuse, recycle, and solid waste. The word study activities that were included focused on the meaning of particular words and the relationships that existed through the common theme that was being studied.

Through the process section of the WebQuest, the preservice teachers scaffolded learning activities so that the elementary students the project was designed for would be successful in completing the required comprehension elements of each WebQuest. For example, activities focusing on comprehension would build on a basic literal level of information (i.e. What is the Statue of Liberty? Where is it located?), gradually expand to a broader synthesis of information (i.e. Why is the Statue of Liberty considered a National Monument?), to finally include an evaluative component (i.e. What should be the next National Monument for the United States? Why?). As part of these activities, the preservice teachers would activate prior knowledge, guide elementary students to determine what is important in a web page from which they seek information, ask questions about what they would be reading, create visuals and other images as part of the activities, synthesize information drawn from multiple sources, and summarize the most important elements about the topic.

Language Arts Elements

The most represented elements of the language arts were reading, writing, speaking, viewing, and visually representing. Although students incorporated activities that requested students to turn around and present information to the class (i.e. speaking), there were no activities that focused on the listening component that would also be necessary for those students who are receiving the information from their peers. For example, students might be required to present the information to the rest of the class, but the audience listening to the presentation was not required to make notes or record this information as they listened to the presentation.

By far the most represented element of the language arts was writing. Activities that focused on this element included the writing of stories, persuasive essays, report writing, how-to guides, journal writing, email correspondence, and the development of books. The element of visually representing was another category of the language arts that was well represented. Elementary students who would complete these activities would be encouraged to create posters, complete charts or concept maps, develop diagram, and construct 3-D models.

Final Thoughts

The development of the WebQuest as a potential use of Internet resources required a certain level of knowledge and expertise using a web page editor software program. Preservice teachers who had less experience with such software felt that they were at more of a disadvantage than those who had previous experience in the development of basic web pages. The comments made by those students related to technical problems that were encountered. They also tended to be more easily frustrated and panic-stricken when such problems were encountered (i.e. font style, size, inserting images, linking to web pages, etc.).

Those students who were technologically proficient were much more confident during the planning and development phase of the entire project. Comments made by these students reflected a level of confidence that enabled them to concentrate on the construction of meaningful literacy events. These preservice teachers were comfortable in their ability to incorporate elements of reading and language arts to plan effective teaching and learning activities for elementary students. The overall consensus from the preservice teachers was that that they believed the WebQuest to be a worthwhile project to use when constructing literacy events with elementary students.

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Kimberly Kimbell-Lopez is an Assistant Professor in the Department of Curriculum, Instruction, and Leadership in the College of Education at Louisiana Tech University. Address: P.O. Box 3161, Ruston, LA 71272. Email: kklopez@latech.edu.

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BEYOND WORD PROCESSING: INTEGRATING TECHNOLOGY IN ENGLISH 101

Dr. MaryAnn Kolloff
Curriculum and Instruction
Eastern Kentucky University
USA
maryann.kolloff@eku.edu

Dr. Kevin Rahimzaden
English Department
Eastern Kentucky University
USA
Kevin.rahimzaden@eku.edu

Dr. Barbara Hussey
English Department
Eastern Kentucky University
USA
barbara.hussey@eku.edu

Abstract: It is the intent of this paper to share the framework (e.g., pre-writing, writing workshops, peer-editing, etc.) for integrating various technologies into freshman composition, ENG 101. Review of the objectives for ENG 101 and the rationale for integrating various technologies will be discussed. Examples of applications of the technologies with emphasis on the appropriateness of the technology for the writing process (curriculum) will be addressed. Reflection by one of the professors of the effectiveness the technology tools is provided as well as barriers to successful integration of some of the technology tools.

Overview of the Preparing Tomorrow's Teachers to Use Technology (PT3) Grant Objectives

The Preparing Tomorrow's Teachers to Use Technology (PT3) implementation grant at Eastern Kentucky University is a unique, collaborative effort between the College of Education, College of Arts and Sciences, and P-12 partners with a focus on transforming the education of future teachers through the infusion of technology throughout the general education and the teacher education program. Implementing the grant is a campus-wide priority through which content areas, pedagogy, and instructional technologies are fully integrated. One of the major goals of the grant includes creating "clusters" of both Education and Arts and Sciences faculty, as well as pre- and in-service teachers, to work together to integrate content, pedagogy and technology through the redesign of technology-rich general education and educational foundations courses for future teachers.

Preparing technologically skilled pre-service teachers begins in the their freshman year during their English general education course, ENG 101. Two English professors, one Education professor, one P-12 teacher, and a sophomore student formed an English cluster. During the first year of the project, the cluster rewrote the syllabus for the course. Objectives of the university's freshman writing courses were revisited along with discussions of appropriate technology tools. Implementation of the revised syllabus occurred in the second year.

It is the purpose of this paper to share the instructional philosophy and strategies for teaching composition, and how the selection of the technologies for the course was guided by these instructional principles. A major criterion for applying technology tools in the course was to promote the learning of the writing process. A guiding question that influenced these decisions was "what can we, as professors of English, do better and differently in class as a result of using of technology?"

Instructional Philosophy and Strategies

The guiding philosophy of the PT3 English 101 composition course was based on the social constructivist model of learning. This model promotes the use of "collective knowledge and skills" within a course so that individual knowledge and skills can be supported. The focus is on building communities of learners within a failure-safe learning environment. This environment involves taking risks by sharing pieces of writing. Providing a supportive environment for taking these risks encourages learning about writing.

The instructional strategy forming the basis of the ENG 101 course was to facilitate the recurring processes in writing by monitor the planning, writing, and revision stages within the process. The English professors assumed the roles of monitors in the writing process. This role entails reflecting, coaching, and evaluating the performance of students (McNabb & Smith, 1998). As monitor, the individual professor becomes a collaborator while focusing on the written piece. At all times, the professors, of the cluster, maintained the positions of the expert and evaluator. With the professor as a collaborator, the richness of the classroom context is taken into account and a community of learners is built. The focus is on centered on implementing different classroom activities as a result of using technology resources. The teacher enhances the classroom with in-depth, and critical thinking conversations focusing on the process of writing. The teacher focuses on the metacognitive strategies for assessment allowing for the self-monitoring of progress. Assessment probes include open-ended questions, exploratory cues, and dialog. As a community of learners, mature writers share their knowledge and skill in the writing process and immature writers are provided with appropriate contextual strategies that engage them successfully in the process of writing. In class, conversations centering on writing allows mature and immature writers to revise links in their mental schema concerning the topic and delete, add or edit their paragraphs within the paper.

Objectives, Technology Selection and Application

The objectives of the English Department and The National Council for Teachers of English (NCTE) guided the rationale for selecting and applying various technologies into the course.

Academic Writing

The English department's main objective for the course is to increase the focus on academic writing. Students are required to write critical responses to short readings rather than writing for narration, description, or definition. The specific objective reads as follows. "Learn about the variety of outside sources, including print and electronic resources, available for developing and supporting one's own ideas in writing, and use of outside resources in at least one essay." (This does not mean students are required to write a formal research paper).

NCTE's objectives state that pre-service teachers "use major sources of books, periodicals, reports, videotapes, electronic and non-electronic databases to understand the relationship between reading and writing", and "examines, evaluates, and selects resources, such as print materials, video recordings, software, websites which support different viewpoints" these objectives supports the departments position on academic writing in Freshman composition courses.

With these objectives, it became evident that the course would increase its emphasis on researching and documenting information. The objectives are closely relate to the concept of information literacy; that is, locating, accessing, and citing references as well as evaluating information available from textual resources and web-sites. The technology that was the best fit with this objective was online search tools; i.e., the University's electronic databases, on-line catalog, and web-sites. The class shared articles and visual information found during the search process in order to support ideas and thoughts concerning specific topics. The concept of identifying and using keywords was emphasized.

Peer Sharing and Evaluation of Writing

A second objective set forth by the University's English Department read as follows. "Read and respond critically to materials relevant to writing, including student writing, writing intended to guide the composition process, and writing which serves as a model or stimulus for the students' own work."

The selection of technology, guided by this objective, was to employ software for courseware authoring such as Blackboard or Web-CT. The rationale for including a courseware authoring system was based on the premise that discussion forums provide equality among students and democratizes classroom discussions (Eckman, 1996). Students often feel less restrained in posting a writing piece, reading the posted writing prior to class, and in preparing comments on each other's works prior to class time. The shift is from the use of technology to preparing for classroom activities. Students come to class prepared to discuss the writing piece. It is at this point that the teachers become the monitor of the writing process.

Classroom technologies: peer sharing and evaluation of writing

Keeping in mind the objective of reading and responding critically to student writing, a classroom equipped with a Smart Board and video projector became a necessity. These technology tools became imperative in that the success of any technology implementation depends largely on class activities, which is determined by teachers. The Smart Board and video projector allowed the professors to carry out the crucial role of monitoring student writing. Within small groups, students decided which piece of writing would be used as a model for class activities.

Prewriting Activities

NCTE's objective states pre-service teachers, "use writing, visual images, and speaking for a variety of purposes and audiences" guided the selection of the visual thinking tool, Inspiration, for brainstorming activities. The software was selected for its attributes of using graphic organizers and outlines. After a demonstration of the software, students used either the graphic organizer or outline to display their schema for the topic. The selection of the graphic organizer or outline aspect was based on students' personal learning preferences. While students worked on the software, the professors were able to clarify any problems with the assignment, coach students while engaging in a performance task, and provide strategic prompts for the students. Use of keywords for concepts, ideas and thoughts and providing links among the ideas were emphasized during instruction. The "notes" feature of the software was used to embellish and elaborate upon a keyword or concept.

Collaborative Writing

Applying NCTE's objective, " produces different forms of written discourse", provided the direction for including a written piece created collaboratively among small groups of students. Technology tools available in the courseware authoring software appropriate for implementing this assignment included discussion forums and use of e-mail. Individuals were responsible for posting single paragraphs to the small group discussion forums based on one thesis statement. The group had to agree on a thesis statement, and, then each individual posted a separate paragraph supporting the thesis. The group was responsible for making organizational decisions concerning the collaborative paper and then suggesting transition statements. Small groups used e-for this purpose. One individual was responsible for preparing the final piece, and then e-mailing the paper to the members and professor.

Use of Visual Images to Support Writing

Two other NCTE objectives state that students "will demonstrate the influence of language and visual images on thinking and writing", and " recognize the influence of media on culture and on people's actions and communication". These objectives suggested that the analysis of visual images in print materials was appropriate for ENG 101. Throughout the semester students analyzed visual and text images as they wrote their pieces of writing. On the final paper students were required to support their thesis on youth culture and denim by incorporating one or more appropriate visual images.

Finally, University's English department objective that students "engage in inquiry – such as class discussion, critical reading, speaking with others, observing, and using technology – appropriate for writing tasks", and NCTE's objectives that the student "displays an understanding of the role of technology in communication" and "demonstrates how reading, writing, speaking, listening, viewing, and thinking are interrelated" provided the direction for the final project of the course. Students were to present a Power Point Presentation based on their thesis paper concerning youth culture and denim. This medium was

selected based on its attributes of changing the manner in which writing was directed, and its communication purposes. Students were required to use effective presentation guidelines that included using keywords, phrases, concepts in bulleted format so that the ideas could be elaborated and embellished during their presentation.

Reflection: The Process of Integrating the Technology

I, Kevin Rahimzaden, began the first semester of PT3 course implementation as perhaps the English service unit's most stubborn skeptic. While much of my skepticism had to do with my own anxieties over teaching and using technology in the classroom, part was also due to the fact that during the year-long planning process for the course, I found it difficult to see how, exactly, the various technologies we included in the course benefited either the learning or teaching process in Freshman Composition. I feared, in fact, the worst: that students would walk away from the semester having learned more about the mechanics of posting to an electronic discussion board than they would about how to construct a careful piece of college-level rhetoric.

Still, some advantages of our PT3 design seemed clear. It was easy to see, for instance, that the course's BlackBoard site would allow students to distribute drafts and share revision suggestions with unusual ease. This aspect of the course would be especially useful at Eastern Kentucky University, where we have a large number of commuting students who find it difficult to meet with their classmates in the evenings or on weekends. The BlackBoard site also seemed well suited to posting updated ancillary materials such as the course schedule and assignment questions so that students could have easy access to them. Powerpoint presentations have become so pervasive in academia and business that students would be well served learning how to do them. Email and the various communication functions of BlackBoard would clearly facilitate communication between myself and my students. Library databases would be an essential component of learning how to conduct research. Although I could not see the advantage of Inspiration, an idea-organizing software, over, say, a blank sheet of paper and a sharp pencil, I was willing to give it the benefit of the doubt, if only because my cluster colleague from the College of Education, MaryAnn Kolloff, was so enthusiastic about this software's possibilities. Nevertheless, in the end it remained unclear to me how any of these technologies would have a real impact on the writing *process*, or, for that matter, on our secondary goal of pre-service teacher training.

Now that our inaugural semester has ended, my central fear, that students would be more absorbed in the technological aspects of the course than they would in learning how to write, has proved goundless. My freshmen were on the whole unfazed by the technologies we used. While I expected such a reaction from those who arrived at the beginning of the semester already comfortable with email and discussion boards and the Internet, I was surprised that even those students who had to learn along the way didn't demonstrate much by way of interest, either positive or negative, even in something as flashy as Powerpoint. Nor did these students seem especially anxious about their initial lack of technological ability, despite the fact that they were so obviously behind the slight majority of students in this area. They simply learned what I asked them to learn as a matter of course, because their instructor expected this of them.

Whatever technological enthusiasm the PT3 aspect of the course generated among my students was focused on the Inspiration software. Despite my thoroughgoing skepticism while we were planning the course, this electronic brainstorming tool ended up a clear improvement over the handwritten charts and outlines I usually demand, at least if the student evaluations turned in at the end of the semester are any guide. Class member after class member indicated that Inspiration really did help them generate and sort out their preliminary essay ideas. And while I cannot say that I saw any noticeable leap in the quality of student writing--or quantity for that matter, for text generation remained an oddly stubborn problem all semester long--I will note one important thing: our hour-long Inspiration sessions forced the class to analyze assignments carefully. Composition students typically "under-read" their assignment questions, especially as they brainstorm and create early drafts. Because one cannot get anything out of Inspiration without first putting quite a bit in, students were quick to learn that they must be speedy and systematic in "figuring out" the what the assignment requires if they are to have a document to turn in as part of their grade by the end of the period. For this reason, Inspiration seems to create a fairly good conceptual and organizational foundation for subsequent drafts. In the past, in-class brainstorming sessions have mostly

functioned as an excuse for students to shut down intellectually for an hour or so; Inspiration, it seems to me, prevents this from occurring, and so may mark an advance in the composition learning process.

Nevertheless, despite a pleasant surprise here and a disappointment there (the classroom's Smartboard, for instance, was not at all useful) I think that my central assumption going into the semester proved largely correct: Though the PT3 technologies we used smoothed out the operation of the course a bit, especially by way of student-to-student and instructor-to-student communication, and by way of better idea-generating sessions through the use of Inspiration, they did not have a meaningful impact on teaching and learning processes in the composition classroom.

Conclusion

When evaluating the effectiveness of the various technologies in the freshmen composition course, based upon the observations and reflections of the course professors, it is clear that students' attitudes towards the technologies were favorable. Also, the professors indicated that using a visual thinking tool such as Inspiration provided many benefits to using class time effectively in the writing process. Other implementations of technology provided students with access to course information and file sharing. On the other hand, Dr. Rahimzaden's initial assumption and resulting conclusion that the technologies "did not have a meaningful impact on teaching and learning process" needs further investigation. Other variables may influence the students' performance in the area of text generation. These variables include students' previous writing abilities, perceiving assignments as authentic and meaningful, desire to become a better writers, willingness to take risks in sharing writing during discussion of written work, and investigating professors' monitoring strategies during class time. These variables guide the basic question that continues to direct the PT3 clusters' discussions: "What can we, as professors of English, do better and differently in class as a result of using the technology?"

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Integrating Technology into Reading Instruction: A New Course Development and Implementation

Leping Liu, Ph.D.
Assistant Professor of Instructional Technology
Towson University, U.S.A.
Email: lliu@towson.edu

Abstract: This paper will present the development and implementation of a new course that prepares reading-major students to use technology to enhance reading instruction. Emphasis is on integrating current computer technologies and software applications into reading curriculum. Course content includes design of reading segments on phonemic awareness, vocabulary development, comprehension, and writing, using presentation, graphics, and multimedia authoring software. Issues, problems we had when developing and teaching this course, the progresses students made, the effects of this course will be discussed.

Introduction

Through our experiences of technology integration projects, we have come to realize that an important part of effectively integrating information technology into classroom is to systematically train the pre-service and in-service teachers in a regular fashion, equipping them with the necessary theoretical foundation and technical skills of the integration. The idea is that we need to have certain courses to prepare them for this. In our general education programs, we are offering certain computer literacy teaching basic computing skills; but very few of the course contents systematically deal with theory or technique of technology integration. Although the courses in the instructional technology (ISTC) programs are well developed to integrate technology into learning and teaching from different perspectives, they are mostly for our ISTC major students, and inappropriate for other students who do not have a background of using technology for various reasons: for example, (1) to take one ISTC course, they may need several prerequisites, (2) the course could not be counted into their original program, or (3) even though they finally get into the course, it may not focus on the particular subject areas they are/will be teaching. After all, it is quite clear to us that courses of technology integration focusing on certain areas might be a good solution. This paper will introduce the design and implementation of such a course—Integration Technology into Reading Instruction.

Purposes of the Course

Overall, this course was designed to help teachers develop technology-based reading instruction. Emphasis was on integrating current computer technologies and software applications into reading curriculum design. Course content included designing reading segments on phonemic awareness, vocabulary development, comprehension, and writing, using presentation, graphics, and multimedia authoring software. It would prepare students to use technology as a tool to enrich reading instruction at all levels.

Specifically, after taking this course, students would be able to use technology as an assisted tool to develop reading instruction on related topics. They would: (1) Develop understanding of various technologies, including basic computing, presentation software, and authoring tools. (2) Use Web resources in reading instruction design, including information search, evaluation, and documentation. (3) Evaluate and use selected reading software packages. (4) Be familiar with the general principles and processes of system design/courseware design. (5) Design appropriate reading instruction with the above mentioned technologies and software on four reading topics (Phonemic Awareness, Vocabulary Development, Comprehension, and Writing).

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The Structure of the Course

Course was structured in three dimensions: (1) Lecture, including theories, concepts, instructional designs, and demonstration of the designs, (2) Cooperative learning, including class/group discussion, group activities and team projects, (3) Lab work, including a series of lab modules from which students learned the basic computing skills, the use and teach of educational software, and multimedia courseware designs.

Course Work

The course work focused on five major projects that were paralleled through the entire semester. The first project was a research project in which students were supposed to search the current trends and issues in the area of using technology in reading instruction, develop research interests on certain topic, and write a research paper. The research questions formulated from this research project should relate to their integration design projects. The second project, parallel with the first one, was an information search project, from which students would learn skills of Web search and online database search, develop information evaluation criteria to determine the quality of the information that they could use for their research and the courseware. An information resource Web site also was developed on the related topics as a whole group project. The third one was to develop a technology portfolio including 12 pieces of basic computing work with the concentration on how they could be used to enhance learning and teaching. The portfolio consisted of the work on word processing (including the uses of table and mail merge), digital graphing, communication skills, spreadsheet and database applications, multimedia presentation, and simple Web page design. The portfolio should have an electronic copy and a hard copy, and On-line copy as option. In the fourth project, students were supposed to develop four short lessons using different reading software. They need to (1) determine the topic of learning or teaching; (2) select and evaluate the software; (3) develop a lesson plan to arrange the procedures of the lesson, when and how to use the software, task, activities, or materials necessary for the lesson, and evaluation methods; and (4) present the lessons to the class and be evaluated by the class. The last project was to design a unit of multimedia courseware using authoring tools on selected topics. Students were supposed to go through all the processes of courseware development form the stage of planning, through analyzing, designing, implementing, evaluating, and revising. The authoring tool used for the reading major students was HyperStudio. Overall, the five projects, together, developed a framework of integrating technology into reading instruction.

Teaching the Course

The author has taught this course twice and found out: (1) we should employ different instructional strategies to teach those majoring in reading than the instructional technology majors. (2) The component of research in this technology-reading course is especially important for students to understand "integration of technology". (3) Coursework such as computer-based instruction program design that focuses on the reading instruction has great potential to be used in classrooms to enhance reading achievement. Some students had already used their self-developed program to their classrooms and obtained very good responses. (4) The assessment strategies and instrument used in this course differ from that used in instructional technology courses, which makes a useful input into another course (Assessment in Instructional Technology). (5) Student-products from this course, such as on-line portfolio, multimedia courseware, and Web resources, can be used to show their technology strength when they go out for a teaching-job interview. Some of the students had already found good positions or been promoted in schools because of their strength of using technology.

Some issues that need to be considered when teaching this course are: (1) the students need extra lab-time to work on their project, and some individuals even need extra help. Therefore, the schedule of computer lab and the availability of the instructor are important issues. (2) The access to necessary educational software is another issue. In this course, students need to learn, evaluate a variety of reading software, and use the software to design a series of short lessons. We only have limited copies of the software and they were installed in our classroom, which was not always available because of all other course schedules. (3). The instructor needs to prepare the lab instruction materials in the way that is appropriate for computer-beginners. The solutions and how everything worked out will be presented on site (because of the length limitation of a short paper).

Preparing Teachers to Use Technology, MI Theory and TESOL Standards

Ines Marquez-Chisholm, Arizona State University West, US
Carol Beckett, Arizona State University West, US

With the increasing cultural and linguistic diversity in classrooms most teachers have or will have students who are in need of English language skill development. In addition to the cultural and linguistic diversity in today's classrooms, teachers must also address the diversity of cognitive strengths that students bring to the learning environment.

In order to ensure that students receive optimal educational opportunities, teacher educators must prepare preservice and inservice teachers with strategies that will accommodate these cultural, linguistic, and cognitive differences. Teacher educators can provide professional development opportunities for teachers to experience learning activities that support the diverse needs of their students. Merging Multiple Intelligences (MI) Theory with language objectives found in the *ESL Standards for Pre-K-12 Students* (TESOL, 1997) provides teachers with instructional strategies that accommodate a range of cultural, linguistic, and cognitive skills. Applying these strategies through the use of technology provides equitable educational opportunities for all students while developing their technology competency.

This interactive session offers participants the opportunity to experience a hands-on computer integrated learning activity that combines MI Theory and TESOL standards.
The activity is a multi-disciplinary lesson including language arts, social studies, and mathematics. The activity provides for verbal/linguistic, logical mathematical, visual/spatial, and intrapersonal intelligences. TESOL standards addressed are Goal 1, Standard 3, "To use English to communicate in social settings: Students will use learning strategies to extend their communicative competence (p.39)." The activity includes gathering information on the Internet, cut and pasting graphics, word processing, and presentation software. Handouts will include information for downloading the TESOL standards from web, on-line references for MI Theory, and additional adaptations for the classroom.

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The Sky IS Falling:
Language Arts Methods, Technology, and a Cleveland School Facilities Crisis

Kristien Marquez-Zenkov, PhD
Cleveland State University
United States
k.zenkov@csuohio.edu

James Harmon, MEd
Lincoln-West High School
United States
j.harmon@prometheus.ed.csuohio.edu

Abstract: This paper describes a literacy education professor's and a middle school technology specialist's pedagogical responses to a Cleveland school facilities crisis. The decrepit conditions of Cleveland's schools offered an opportunity to engage language arts teacher candidates in a authentic, multi-disciplinary, performance-based research, writing, design, and presentation language arts methods curricula that integrated tools of technology. The authors suggest implications for language arts, technology, and democratic education.

Introduction

On October 6, 2000, the roof of the gym at Cleveland's East High School collapsed onto the basketball courts below, injuring no students or staff, but sending a loud message to the Cleveland Municipal School District and the city of Cleveland. In the ensuing months, the then-Mayor of Cleveland, Michael White, and the Mayor-appointed Chief Executive Officer (CEO) of the District, Barbara Byrd-Bennett, formed a temporary citizen's council (the Facilities Assessment Commission) which appealed for broad public input at several forums held around the city. These roundtables offered a chance for residents to vent their frustrations, express their fears, and contribute their ideas about the state—both physical and academic—of the city's schools.

The city and its district clearly no longer had a choice about addressing the facility needs of its schools: significant investments would need to be made immediately, merely for the physical safety of the students and staff. While the Commission was necessarily concerned with the state of the physical plant of each of the District's 122 buildings, the larger symbolic significance of the conditions of a district's schools was then and still remains an underlying issue. What are the implications of such a decrepit physical state for the state of the academics and the morale of students and teachers? Can these conditions be indicators of the expectations that a community has for its youth? Might the physical and aesthetic environment of a school building serve as a starting point for a language arts curriculum that is highly relevant, project-oriented, and appropriately technology-infused?

These were the questions that this article's authors—a literacy education professor and an educational technology specialist—asked as they planned the teacher education curricula on which they would collaborate during the 2000-2001 academic year. This article describes these educators' pedagogical responses to this facilities crisis and details a language arts methods

curricula that is uniquely multi-disciplinary, technology rich and performance-based, energized by an immediate and authentic citizen concern, but still honors the traditional writing, reading, and presentation components of a language arts methods course. This course provided authentic opportunities for the teacher educator, technology specialist, and future classroom teachers to utilize tools of technology that are not usually considered relevant to or viable in a language arts setting. These tools provided unique, tangible, cross-curricular strategies for making the "recreation of our classrooms" the focus of a language arts experiences.

Perspectives and standards

This language arts methods course began with a collective role-playing activity that is part of the vernacular of "process drama" (O'Neill, 1995), through which all teacher candidates engaged with numerous constituent perspectives. Who were the members of the city district's hastily called Facilities Assessment Commission (FAC)? The commission's members and the attendees at the various public forums included a broad cross-section of the Cleveland's schools constituents—business leaders, foundation representatives, grandparents, community service agency workers, pastors, union activists, teachers, students, parents, engineers, artists, etc. The language arts teacher candidates adopted these and myriad other points of view, using these perspectives to consider a range of standards by which to judge language arts curricula, their own teaching practices, their achievement in our course, and the design and function of schools in general.

Using the process drama method of role-playing developed by Dorothy Heathcote (Heathcote and Bolton, 1995), these teacher candidates frequently took on these constituent perspectives collectively; rather than each student adopting an individual point-of-view, the entire class considered the ongoing school building events from a single perspective. At the beginning of most of the 15 evening class sessions the teacher candidates were provided a news article, Facilities Assessment Commission draft report, photograph of a current Cleveland school building, or another artifact to quickly and concretely focus their attention and provide an impetus for the selection of a constituent perspective. These artifacts became the lenses through which students imagined and described the events that resulted in these reports, etc.

In addition to the important process of allowing students to understand the range of perspectives on a school, the primary use of this early role-playing was in the development of a class set of standards and objectives for all classrooms. For first course writing assignment students adopted these roles in order to conduct and transcribe interviews with friends and family about their experiences in schools, translating these into their own "Standards Recounts" about what the expectations of school had been over previous generations. For this initial assignment, it was important that the class consider the broadest definition of "standards," as the instructors hoped to build a bank of potential expectations and outcomes for classrooms and schools before narrowing the class focus to a set of standards to which the students and instructors could commit professionally.

These standards served several purposes throughout the course. First, they were used as set of guidelines that established some ground rules for engagement amongst the students and instructors of this course. Secondly, they were meant to provide these future teachers with an example of a standard-setting process that they might use in their future classrooms. Thirdly, they required these teacher candidates to research and discuss the proliferating "standards" (especially technology standards, such as the NETS for teachers touted by the International Society for Technology in Education [ISTE]) with which K-12 teachers are supposed to be

conversant and to which they are being held accountable. Finally, these standards were used as a set of outcomes against which students in this course assessed themselves and by which they were assessed by the university instructor through a semester-long portfolio development project.

Students started this standard-setting process by looking at the College of Education model that drives the curriculum in the teacher education programs at Cleveland State University. They then described the lists of classroom rules and expectations that they had encountered in their various field experiences, practica, and student teaching, as well as the rules and guidelines they might have for students in their future classrooms. To these lists they added any expectations that the students believed community constituents might have for the schools, based on the role-playing activities in which they'd engaged. They shared this list of more than 30 potential guidelines with each other via web-based email accounts.

With a bank of almost three dozen potential standards for language arts classrooms, one might expect that the instructors would have wanted to begin the winnowing process, paring this almost overwhelming list down to a manageable number. While they felt a strong pedagogical urge to do this, they decided instead to have the students sit with and even add to this catalog through the use of some visual explorations. Rather than begin a decision-making process, students built on this list of standards through the visual brainstorming by completing a "Photo Essay" assignment where they shot pictures (both 35mm and digital) of the city schools in which they were currently completing a practica.

As well, the class visited the Cleveland Public Library's digital photo archives to study the history of school architecture in the city, and toured the recently renovated seventy year old middle school where the technology specialist worked to document the aesthetic and design features of the building and classrooms. Students again used both digital and 35 mm cameras to document the features of the middle school, while for their own photo essays students shot color 35 mm film. At the photo archives they used an optical scanner to view and print photos of school and community buildings stored off-site, and compared these archived photos with their up-to-date images of the same school structures.

These analog and digital photographs provided the final, compelling, design-based (Taylor, Vlastos, and Marshall, 1991) component of this standards generation and discussion process. While students' previous school experiences and the various lists of standards from professional organizations afforded a substantial overview of relevant curricular and community guidelines, the students' use of visual tools with which they had less experience provided a unique perspective on how these standards are fleshed out in the very designs and structures of our classrooms (Uline, 1997). Consequently, their ideas for the standards that should guide their teaching expanded to include guidelines that considered these environmental elements. To support their understanding of the connection between the visual evidence to which they were being exposed and the standards for schools and curricula that this evidence represented, the instructors provided them with a T-chart that allowed them to graph these connections.

When the language arts methods class visited and toured the technology specialist's school, they were able to use one of the school's computer labs to submit these broader perspectives on standards to a discussion board on the course Website. They could then view each others' ideas immediately and begin to consider the full range of these ideas as they prepared to select their final list of course standards or outcomes. Additionally, because of this asynchronous environment, students could engage in each other's ideas in settings outside of class, where the traditional pressures of classroom discussion did not factor. It is the opinion of

the authors that the discussion board format allowed students to carefully formulate new threads and operate at a level higher than what was commonly experienced in class.

Over the course of the semester the class used the final class list of standards to support and assess all course projects. The roles considered in building this final list of standards provided the class with the rich perspectives that educators should regard when they construct their language arts curricula. While technology is explicitly mentioned in one of the language arts curricula standards, it is the authors' opinion that technology is implicit in all of the standards. While this process required class time during each of the first four weeks of the course, it allowed for a deep, multi-disciplinary, and authentic consideration of the idea of teaching standards and the development of a set of standards to which each student was personally and professionally committed. It provided the students with numerous opportunities for discussion, debate, reading, and writing in both traditional and electronic modes—the basic skills of language arts—and required that they engage in the very activities they might use in their own middle grades classrooms in the future.

As well, this standards development process relied upon an integration of technology that supported and extended the reading, writing, brainstorming, and professional discussion emphases of this process. Because students were asked to use these tools in order to generate ideas and to build a store of potential classroom guidelines, their reluctance to use these new tools was mediated. The instructors' modeling of integration also demonstrated the importance of bringing technology in when it was appropriate and had an explicit impact on the content off students' learning. Finally, and perhaps too obviously, this process placed the question of classroom design and aesthetics at the center of any curricular, pedagogical, technological or behavioral consideration. It communicated to these future teachers that the design factors are interwoven with—though most often silent in—the everyday choices of language arts educators.

Conclusion

One of the realities of teaching and teacher education work is that educators are typically so bombarded with discrete tasks that they rarely have the chance to gain a broader perspective on these tasks. What is the relationship of these tasks to each other? How do they fit with the field in which educators are working? How do they relate to the overarching curriculum concepts a particular class is supposed to address? Often, educators at all levels plan for a class, devise most of a semester's outline for a course, and then delve into these daily and weekly responsibilities, only to surface for air at the end of a semester. Or a career.

The focus of this integration of design-based projects and technology into a language arts methods curriculum was a deliberate attempt to challenge this myopic tendency. Teacher candidates often hear about the importance of their educational philosophies, only to have any time or capacity for contemplating the larger purposes of their professional work squeezed out of them in the first years of K-12 public school experience. This essay suggests that if our society wants educators to continue to contemplate the grander implications of their teaching practices, then it must provide them concrete—as in the bricks and mortar of our school buildings—ways of exploring the relationship between their daily lessons and school's broader purposes.

This essay opened with questions about the effects of a school's decrepit physical condition on the state of the academics and the morale of its students and teachers, and about the extent to which these conditions might be indicators of the expectations that a community has for its youth. The answer is to these questions is obvious and requires no elaborate research study to prove: students and educators will default to what they see; their expectations and ideals are

rooted in what they experience daily. If kids learn in crumbling, forgotten schools, the first lesson they will learn is that the value of their educational endeavor is an afterthought in the minds of their community.

Much like students in schools, teacher candidates will resort to what they see and experience in their model instructors. In this case, they witnessed instructors who engaged them with not only a technologically enriched, standards-based curriculum, but also with sense of "eventness" and social justice. As the evidence of this course demonstrates, the physical and aesthetic environment of a school building can serve as a starting point for a language arts curriculum that is highly relevant, project-oriented, and technology-infused. This article suggests explicit strategies and projects that classroom teachers, teacher educators, and curriculum specialists and theorists might use to make the study and design of educational environments cross-curricular, democratic education projects. This project has the potential to alter significantly current language arts teacher education and language arts curricula, as well as history curricula and the state of our city schools nationwide. One unique implication of this project was its use of "parallel practices": in order for teachers to understand the importance of their language arts lessons, they must engage in and be legitimately affected by the projects they require of their students. Design-based activities lend themselves to this sort of "practice what you preach" ideal.

Of course, a teacher or teacher educator must be very comfortable or proficient with her or his content, before using tools of design or technology with this content. But the content of language arts—and other subject areas, as well—can be supported and extended by these tools of design and technology. All of these activities began with "doing" rather than "learning": students engaged in these projects largely without recognizing that they were simultaneously engaged in learning about teaching.

The authors suggest that an explicit focus on the authentic project of considering and altering the design and aesthetics of educational environments might both enliven students' language arts education and provide immediate opportunities for democratic engagement. The public artists who are language arts and English teachers might help the rest of us—artists of the public, all—find our way as we engage with our school lessons, our immediate communities, and our broadest political contexts. They might begin by calling upon their students to recreate the very classrooms in which they are learning.

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Mapping the Boundaries of Literacy and Literacy Education in Cyberspace: Four Preliminary Markers

Barbara O'Byrne
Marshall University Graduate College
Bobyrne@marshall.edu

Noel Bowling
Marshall University Graduate College
Nbowling@marshall.edu

Patrick Iannone
Marshall University Graduate College
Piannone@marshall.edu

Tom Caron
Marshall University Graduate College
Tcaron@marshall.edu

Abstract: This paper identifies and analyzes four markers significant in assessing the impact of Web-based delivery on the teaching and learning of literacy. The paper describes how Web-based instruction is questioning assumptions about course delivery models and is re-casting boundaries between human interaction and texts. It adds to the discourse on the ways in which Web-based instruction supports critical thinking and reflective writing, as well as learner engagement.

Introduction

Three years ago, the Reading Education program at Marshall University Graduate College experimented with Web-based delivery as a means of serving the needs of students in our distance education program. We now find ourselves in the midst of a sea change. What began as a venture to cut down on traveling time for students and faculty triggered an interrogation of course delivery models, and of the influence of technology on conceptions of literacy and of literacy education. Four markers have emerged as significant in this re-charting of the terrain of literacy and of literacy education in the wake of cyberspace:

1. A need to marry web-based delivery with a face-to-face delivery model
2. The shifting relationships of literacy processes in Web-based teaching and learning
3. Web-based learning presents unique opportunities for student engagement
4. Web-based learning communities can actualize the reading-writing connection

Marrying web-based delivery with a face-to-face delivery model

Mission and structure propel the change to Web-based instruction

Prior to the introduction of Web-based course delivery, the Reading Education program enjoyed a positive reputation for being both rigorous and student-friendly. Why mess with something that was working? As program director, this was my initial take on Web-CT. Although our program was working well, the out-reach mission was limited to two sites in southern West Virginia. Forays beyond these sites resulted in small classes, and occasionally interrupted programs. The program was restricted to fewer than 75 students per semester, some of whom dropped-out completely or meandered through their course of study in ways that threatened program cohesiveness. What was needed was a means to extend the program to underserved areas of the state. The three courses that were the hardest to schedule, due to being housed in other

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programs, were the first revised into Web-CT deliveries. This, along the with recruitment of students into regional cohorts, allowed the Reading Education Program to expand to 11 sites and serve from 200-300 students each term. During the past year, we have averaged over 400 students per term.

Scheduling considerations

Before Web-CT, my major scheduling concern was to make sure the program faculty had sufficient number of students in their courses and that a balance of students per course was reached. This has changed. My concern now is to hold down the numbers to where they are manageable. We have found that Web-CT is much more labor intensive than first thought. Students expect and need quick feedback regarding their assignments and inquiries. This means that the instructors craft hundreds of responses during the semester, in addition to grading assignments. Through trial and error, we have learned that a class that exceeds 20 students will need additional instructional support.

Marrying Web-based delivery with face-to face-delivery

My first reaction to Web-CT was that it was a complex copy of the instructional modules that were attempted in the mid-to-late '70's. After some disappointing experiences, I abandoned their use. Module responses were based upon the analysis of program defined information sources such as a textbook and journal articles. Collaboration supporting the student's analysis was sparse, even from the instructor. It was expected of the student to form answers to several questions related to the readings. In comparison, Web-CT courses both address 'propositional knowledge' (knowing what) and 'procedural knowledge' (knowing how). Web-CT can stretch learning beyond producing a final product by enabling the learner to access feedback at numerous points in the learning experience. The feedback may come through collaboration, coaching, and questioning, and it can come from the instructor, network of classmates, Internet resources, and, most importantly, reflection. Although further analysis and review are underway in regards to the quality of all Web-CT course delivery, our four field-based reading courses are not being considered at this time for Web-CT delivery. Careful instructor supervision is required for two of the courses (Polanyi, 1958) and instructional resources that depict student-teacher interactions are required for the other two. Web-CT technology will be more useful in these courses once a more comprehensive video clip library is formed, but it will likely be used in conjunction with individual, group, and whole class face-to-face delivery formats.

Considering the shifting relationships of literacy processes in relation to Web-based teaching and learning experiences

Web-based courses share this much in common with traditionally delivered courses. Students need to know what to read, what to do with the readings, and how to proceed with the task. New electronic forms of reading and writing (e.g., e-mail), however, "point to fundamental changes in the way we communicate and disseminate information, the way we approach the task of reading and writing, and the way we think about helping people become literate"(Reinking, 1995, p., 17). A unique challenge faced by those who teach Web-based courses, then, relates to supporting students' efforts to use new electronic forms of reading and writing to learn. The challenge: Instructors must reconsider how literacy process such as reading and writing should be used to help students relate information from course learning materials (e.g., readings) to course learning experiences (i.e., assignments) when working within Web-based learning contexts.

Recasting the boundaries between human interaction and written text

Historically, within traditional delivery contexts (e.g., the classroom), teachers and students have relied primarily on speaking and listening to facilitate human interaction, while the reading of written text has been used to facilitate interpretation and reflection (Bruner, 1972). Students often rely on the processes of speaking and listening to understand the instructor's expectations in relation to course assignments. For example, students may use verbal illustrations provided by the instructor or ask questions to clarify their

understandings in relation to assignment criteria. In contrast, students often use the process of reading to comprehend and interpret relevant ideas presented in the readings, using the text later as a reference point for reflecting upon connections to course assignments.

When a Web-based delivery system is used, the traditional/historical boundaries between human interaction and written texts are recast. Through electronic environments such bulletin boards, chat rooms, listservs, and e-mail, "human interaction now takes place in a text -based form" (Warschauer, 1999), reducing student reliance upon the processes of speaking and listening to understand instructor expectations. In addition, the use of Web-based documents, hypertext links and multimedia effects (e.g., graphic images, sound, and streaming video) changes how students approach the reading process. The reading process becomes less fixed and linear (Reinking, 1995), and more extensive (Birkerts, 1994) in nature, as students use hypertext links and use multimedia effects to comprehend and interpret course learning materials.

The instructor's role in defining processes and procedures

While it is clear that the nature and emphasis on literacy processes that contribute to student learning shifts within Web-based contexts, it is less clear how those who design and deliver instruction through Web-based courses should use this information to help students learn. One alternative that considers the shifting relationships and nature of these literacy processes with respect to teaching and learning emphasizes the use of process-based procedures and criteria. Initially, Web-based instructors should provide students with several sources of information to consider beyond the course syllabus in relation to course assignments. A description of each assignment should be provided, specifying what the student should do to complete the assignment successfully. Web-based instructors should also specify criteria for each assignment, suggesting the cognitive acts students should engage in to demonstrate their understanding of course content (e.g., summarizing information from course reading materials and/or critically evaluating information from course reading materials). The assignment criteria serve as a means of communicating the benchmarks or goals that the student should achieve. In addition, procedures for completing each of the assignments should be specified. These procedures will help students understand how to achieve the criteria for each assignment. Together, these sources of information will help students grasp how the process of learning information from course materials intersects with the process of completing course learning experiences.

Weaving a web for learning: student engagement

The old call for "time on task" has been with us for decades as one of the few measures that relate closely to real learning. Yet too often classroom attention to this can lead to superficial and unimportant learning. Our attempts to identify "competencies" such as the IRA standards helps somewhat as we develop educational environments and activities based on targeted learning goals. Still this too can result in piecemeal and isolated skill-based learning which is too narrow and limited to support the development of thoughtful and reflective literacy professionals prepared to make important decisions about students, classrooms, and reading programs. How can we create the student engagement necessary to support the learning needed (Schön 1983)? Mindful of this need, our reading program has experimented with Web-based delivery of courses. As we develop Web-CT delivery, we gain greater opportunities for some forms of student engagement in meaningful learning as we also lose other opportunities.

Gains are represented by new and extended opportunities for students to interact. Through reading, writing, and thinking in email exchanges and bulletin board sharing students find themselves interacting more than they did in traditional classroom settings. Through instructor guidance and feedback these forms of engagement are directed towards meaningful and important learning experiences. The necessity for writing to replace "classroom discussion" in Web-CT courses, for example, leads naturally to a greater opportunity for students to engage in writing activities. Although our reading students sometimes balk at a writing requirement, over time they come to recognize the merits of this added focus on writing and thinking. These benefits seem to arise from needs that are inherent in Web-CT's format, needs that lead naturally to greater place for writing, and the cognitive demands this entails, as well as extensive exchanges between student and teacher.

In contrast, the reduction of "face to face meetings" in Web-CT courses leads to the loss of some important serendipitous opportunities for learning. Many forms of demonstrations and classroom engagements cannot

be easily duplicated in a Web-CT learning environment. What kinds of experiential learning from these interactions are lost by web delivery? Can optimizing time during a small percentage of "live" meetings replace this loss, or are we faced with changing how we represent learning and learning goals for our students in the future as we move more substantially to web delivery? These issues need addressing.

Actualizing the reading-writing connection in Web-based learning communities

Research on reading and writing has confirmed that they follow parallel and interconnected paths (Brozo & Simpson, 1995) and, that their regular integration sharpens participants' awareness of the social and communicative nature of literacy (Shanahan, 1990). Practical constraints often lead to a separation of the two in face-to-face classes in which the instructor's primary role is to deliver content. Students often report reading without comprehending texts or neglecting regular, weekly reading. Many writing assignments are used to show learning rather than "to discover or create new knowledge" (Foote, p. 211, 1999). The rethinking of literacy processes, essential in Web-based delivery, provides an opportunity to integrate reading and writing in ways that extend the literacy development of graduate students.

Moving reading and writing to the center of the course

The bulletin board is an asynchronous, interactive communication system that allows course participants to respond to postings of one another. When used in conjunction with carefully crafted learning activities, it can promote student engagement with core readings. Journal activities linked to the bulletin board were central to the conception of CIRG 621 Issues and Problems in Reading Education, a Web-based Reading course at Marshall University Graduate College. Participants composed weekly journals that related to central issues in weekly readings and responded to the journals of other participants. Completion of eleven sets of journal activities per semester has been over 99 % throughout the six sessions of the course. Participants reported spending an average of 1.5 hours on the reading, 1 hour composing the journal, and 30 minutes responding to the journals of other participants. When provided with a viable structure, participants connected reading and writing and quickly sharpened critical reading skills. A preliminary analysis of the journals and responses by an outside observer confirmed that journals became more rigorous, more grounded in the text, and more integrated with professional experience. Bulletin board discussions encouraged active learners who read less on 'automatic pilot' (El-Hindi, 1997).

Moving participants to the center of knowledge-making: the on-line learning community

A unique feature of the journaling activity is that, in essence, participants collaborated in the task of making meaning with weekly readings. Unlike the discourse of traditional classes dominated by the voices of a few, the discourse of the bulletin board identified the voice of every participant. Over time, the bulletin board discussions established a 'learning community' whose goal was to construct meaning with the weekly readings (Wells & Wells-Chang, 1992). The responses of other participants heightened awareness of personal learning processes (El-Hindi, 1997). Instead of private responses journals written on 'automatic pilot' that often surface in traditional classes, the bulletin board postings reflected the positive influence of being responsible for communicating one's ideas to others and for responding to the ideas of course participants.

An independent observer assigned to read the journals noticed a pattern of changes in the bulletin board postings. Journals became longer, more specifically grounded in the ideas of the weekly readings, and more critically reflective. They referred to specific ideas and insights of participants; they drew heavily from personal, professional experience to construct meaning from texts and to respond to the ideas of other participants; they constructed action plans; they 'questioned ideas' (El Hindi & Leu, 1998). The bulletin board postings validated the expertise of the community members as literacy specialists whose identity had shifted from seekers of knowledge to makers of knowledge.

De-centering the instructor

The bulletin board activities in CIRG 621 that encouraged participants to integrate reading, writing, and communicating pointed out a fundamental fact of web-based course geometry. Student tasks and

interactions move to the center of the course. Instructor tasks and interactions operate more behind the scenes. Web-based instruction makes the instructor responsible for creating the on-line learning environment and this entails careful alignment of anticipated outcomes and learning experiences.

Conclusions

Web-based instruction recasts the boundaries between human interaction and written texts, and this in turn, establishes new roles and challenges for instructors of Web-based courses. Web-based delivery makes possible the integration of reading and writing activities in a social context that is advocated by current literacy research. However, the positive engagement of students in reading and writing activities cannot substitute for learning that is better achieved in face-to-face settings. The communication tools of cyberspace and the simulation possibilities of virtual reality cannot replicate the all of the ways of knowing involved in becoming a literacy specialist. Rather than choosing between Web-based and face-to-face delivery models, instructors may operate with blended class formats that respect the domains of knowledge that are balanced differently in each course. This balance will influence the manner and degree to which web-based instruction can be integrated with face-to-face delivery. It is our hope that these four markers will serve as lightships in charting the contours of literacy and literacy education in the labile medium of cyberspace.

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Using Technology to Address Demographic Change and to Integrate Meaningful Assessment in a Writing Program.

Rosemary K. O'Donoghue, Director, Writing and Reading Program,
Western New England College, United States, rodonogh@wnec.edu

Abstract By using technology to teach the basic concepts of composition instruction, and by utilizing technology to produce assessment requirements, a college or school system can effect change in a writing program without traumatizing students, faculty, or administrators.

Today, there are two critical issues that college Writing Programs face: 1) how to address demographic change in students and faculty and 2) how to integrate meaningful assessment measures with traditional pedagogy. If as administrators and teachers we relate these issues to technology, we can revitalize composition instruction without sacrificing essential content.

Schools are experiencing demographic change in their student bodies and their faculties, not the least of which is technological expertise. Administrators are requiring increasingly more program assessment. Faculty across the curriculum are demanding that students be able to write academic papers. Furthermore, because there is not a uniform standard of excellence, the "good paper" is a nebulous thing. Complicating these issues is the fact that composition studies have become a discipline, a significant evolution in the past 20 years, and, as is the case in most disciplines, because the field has developed many threads, writing programs often must overcome resistance to change and/or inertia. That most schools have faculty from a range of backgrounds and technological experience only serves to further complicate these issues. However, once having identified the basic goals of a writing program, if we make it easy to use technological innovation beyond the use of a computer as a glorified typewriter, students can have a program tailored to their needs; faculty can stress a common core and can learn to incorporate technology painlessly; and administrators can compile the required program assessment.

In the Classroom

Incoming freshmen typically arrive with inconsistent writing skills. They have varying degrees of proficiency in conducting and documenting research, constructing cogent arguments, and applying rhetorical and grammatical standards. Faculty often have developed "pet" ways of dealing with these heterogeneous classes; some are measurably effective; others are less so. We have found that by making technology a major part of each course, we can provide a common core of instruction. Furthermore, by distributing the common core to the faculty at large, we can help them to develop expectations for the caliber of academic writing their students will produce.

Among the methods that have worked for us in the classroom are:

- Meeting each class in a computerized classroom once a week.
- Constructing a common core of instruction
- Developing core lessons that can be used in a computerized classroom
- Creating PowerPoint lessons that can be individualized by faculty
- Using a LAN to create faculty directories for in-class work
- Establishing an Internet connection and using it for in-class work
- Crafting a Departmental Web page that has many resources
- Providing meaningful CAI for a writing class (handbook, full dictionary, links to web sites, etc.
- Establishing grammar, EFL, and reading drills and pointing students to them on an individualized basis, as needed.
- Using WORD features (for instance highlight changes, compare documents, track changes.)

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Assessment

Administrative units are requiring more detailed assessment of students, courses, and programs. To assess courses and programs properly, we should identify specific, assessable goals; stipulate what constitutes success in reaching those goals; evaluate whether or not the goals were reached; and feed the results back into the program. The assessment of students in a course or program should be related to those goals.

We have found it meaningful to:

Compile data about academic indicators and student background and provide faculty with individual class profiles in the aggregate.
Develop grading rubrics or standards for grades that are tied to the goals of the course and to the degree of accomplishment as related to the common core.
Provide faculty with comparisons of indicators and mid year and final grades
Develop portfolios for each student and assess them according to the goals of the course.
Distribute results of assessment to the faculty at large.

Conclusions

By thus relying on technology to implement a common core, we can assure that students receive standardized instruction, and we have not infringed on the traditional professorial right to an individual teaching style. By developing rubrics that are determined by the common core of instruction and assessing portfolios according to those rubrics, we can provide meaningful assessment of the course. By telling faculty across the curriculum what the results of the assessment are, we can provide them with meaningful expectations of the academic writing they will receive. The students enjoy using technology. The faculty are not frustrated by their varying degrees of technological expertise. The administration has assessment that is pertinent.

The 3D Term Paper: Putting Virtual Reality into the Writing Process

Carl L. Reynolds, Professor
College of Education
University of Wyoming
Laramie, WY 82071
Aged@uwyo.edu

Christine D. Reynolds
Language Arts Instructor
Rock River School
Rock River, WY 82083
Creynolds@sage.ac1.k12.wy.us

Abstract: In order to meet a need for an enhanced approach to writing term papers using MLA format, the secondary ELA teacher in an isolated rural school in southeastern Wyoming integrated web-based technology into the process. Students acquired communication skills that are traditionally a part of standard ELA instruction, as well as meeting district standards and benchmarks, while incorporating advanced technology to complete the project in a highly motivating manner. The assignment motivated students to think for themselves, to solve problems, and to read, interpret and apply complex operations in what previously had been a commo n, mundane, "boring" assignment. The students had fun, the teacher had fun, and ELA standards and benchmarks were mastered.

Introduction:

In order to stimulate new interest in the old, English-Language Arts standby, the term paper, the instructor searched for ways to utilize advanced technology to enhance the students' annual term paper efforts. The students were asked to incorporate appropriate web site URLs in the body of their work. Not only were they asked to use the web as a source for information to document their research on selected topics, but the URLs also became a part of the paper itself. In addition, students were asked to embed multimedia sites, such as movie clips, sound clips, action cam sites, and virtual tours to enhance their message and to create a third dimension to their work.

Background:

Prior to integrating technology in the writing process, students would dutifully complete the annual term paper assignment, using standard, hard copy material found in the library. They copied out of the encyclopedias, magazines, and periodicals, in spite of repeated warnings of the evils of plagiarism. In addition, because of the size of the school library in a K-12 school in rural Wyoming, much of the hard copy resources available were sorely out-of-date. Or, they would enlist the assistance of mom, dad, a friend or the Internet, to create the paper for them. In the past, money had been spent to purchase the term paper assignment. Something had to be done to encourage the students to want to complete the assignment themselves, as their best work, and to create a document of which they could be justly proud. By creating a new "third" dimension to the assignment, students were motivated to take pride and ownership in the project. It became fun to write a term paper.

Implementation :

The instructor utilized time-tested writing process instructional procedures, as well as integrating web-based technologies to augment the students' annual term paper writing experience. In collaboration with university personnel in the College of Education, the teacher and university faculty member demonstrated the use of Internet sites and selected citations to prove the validity of the paper's thesis. Traditional research methods were taught to students who anged in age from 12-18, in grades 7-12. The teacher demonstrated the use of the MLA format, a traditional research tool, for all students to ensure quality results. The teacher demonstrated, through the use of paragraphs with imbedded URL's, the impact of multimedia in providing additional emphasis and impact to prove the thesis of the paper. Demonstrations were conducted, through analysis and the application of critical judgement of several sites, the rationale for selecting a particular site. Finally, the students were instructed in ways to establish the reliability and validity of the chosen sites. As a final step to the project, the students projected their work (in addition to handing in a hard copy for archival purposes), using Microsoft Word and the school's computer display projector, and they gave a speech about the results of their research.

The combined project was archived as a part of their "body of evidence" to prove competency in the ELA state standards of Reading, Writing, Listening, Speaking, and Integration.

Conclusion:

Because of a need to enhance, through technology and multimedia, the required but often mundane assignment of the annual term paper, students were given the chance to create a 3D term paper. The project featured URL's embedded within the paper, that were hyperlinks to sites that featured movie clips, sound clips, action cam sites, and virtual tours to enhance their message and to create a third dimension to their work. The multi-dimensional project stimulated increased creativity and interest in the term project, which usually caused groans from the students. Instead, comments during class from students included such comments as, "Come see what I just found!"

Follow-up interviews with students indicated clearly that students were more motivated, collaborated with each other more, and shared in each other's work much more than when the traditional term paper writing project was conducted. Comments such as "I don't care much about writing, but this project was more like putting a show together", and "I enjoyed seeing what other kids came up with" were common. By adding the "third dimension" students were taught, Traditional English standards were accomplished, as well as integrating advanced technology skills in the English curriculum. Most of all the project became "fun" for students and the teacher alike, while at the same time accomplishing the ELA standards and benchmarks mandated by the state and local district.

Lessons Learned: Twelve Years of Actively Integrating Technology into the Teacher Education Program

Susan Ramp Ridout, sridout@ius.edu
Carl deGraaf, cdegraaf @ius.edu
Jane E. Riehl, jriehl, jriehl @ius.edu
Indiana University Southeast, New Albany, IN, USA

Background

Twelve years ago, an overwhelming feeling of remiss fell upon the two teachers of the Language Arts/Reading Methods Block at Indiana University Southeast in New Albany, Indiana. Why? We kept hearing about the power of technology in the classroom and the backwardness of any teacher preparation program that ignored this idea. From whom did we hear this? From national publications and "future experts." But even closer to home, we heard it from a colleague in our own School of Education.

After facing up to the fact that our forward-thinking colleague was right, we decided to try to change our current modus operandi to make room for technology within our methods courses. But there was one major problem. Neither of the two methods teachers knew much about technology for our own personal uses, let alone had enough confidence to require students to teach lessons using technology while we supervised. So, we did the only thing we knew how to do, we asked our colleague who was so interested in seeing an infusion of technology into methods courses, if he would help us.

During the first years of this project, our students had very little computer savvy coming into their Language Arts/Reading block. Some had been in a 1-hour computer course, but really did not know the software they would be using with children. Therefore, our colleague trained the university students by holding workshops to learn the software we would be using at Galena Elementary School, the site of our practicum. Now our students come to the Language Arts/Reading Methods block having had a 3-hour college course in educational computing, and are fairly comfortable using technology themselves.

While the technological ride continues to evolve, after twelve years we have learned several valuable lessons. Here are a few of them:

Lessons Learned

One: The university is not in charge of all decision-making. At first, we at the campus selected the software, delivered the workshops to our students, and shared our limited expertise in an authoritative way. But, as time has marched on, not only have the Language Arts/Reading teachers become more comfortable with technology, the teachers at Galena have, too. Now, the school has requested the software packages we use. Together, we plan our projects, attend conferences, and give presentations.

Two: Programs housing technology must be in a constant state of evaluation/change. While it would be easier to stick with software packages and the present "way of doing things," the program has needed to be in a constant state of change. For example: we have gone from desk top computers in a lab, to lap tops in various locations in the school, back to desktops, but this time **not** in a lab, but in the actual classrooms. Numerous times we have changed software packages, e-mail transport systems, and the way children respond to e-mail. This notion of constant change has not been easy for the two methods teachers who like to feel more organized and prepared than advances in technology will allow. Indeed, hard work is the constant companion of technological innovation in schools, and there is little time to "coast and enjoy the ride."

Three: All participants are the teachers of technology. It no longer is one teacher at Indiana University Southeast and one teacher at Galena who hold the keys to incorporating technology. Now, the IU Southeast students share their knowledge with the children, with Galena teachers, and with the IU Southeast faculty members. Likewise the teachers at Galena and the methods faculty share technology tips and help students and children problem-solve. And, often most helpful, the children at Galena continue to instruct all of the adults involved in this project.

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Four: The availability of hardware determines how fluid the infusion of technology is. A few years ago when we first heard that the computer lab at Galena Elementary School was being dismantled, we almost cried! What? How were we going to actively incorporated technology into the program without a lab? And...what about glitches? Who would help with the glitches? (All of the adults might have to know a bit more because the most technology-proficient Galena teacher and IU Southeast faculty member could not be everywhere at once.) As it turned out, this change was exactly what we all needed. It forced us all to become more diligent in our efforts to become proficient with technology and it enabled our students to really use technology in a fluid manner. Having the hardware readily available in the classrooms has allowed children to look up questions, write on the word processor, or create hyper cards when they are ready, not necessarily during the 30 minutes they were previously assigned to the computer lab.

Five: The Internet truly enhances the power of literacy lessons. We are watching our students teach literature-based lessons that include skimming, scanning, and note taking skills and strategies being taught as the children gather research from Internet sites. The children enjoy engaging in purposeful reading activities on the Internet, all the while improving their understanding of the logical organization of web sites. This, in turn, is helping them with their reading comprehension skills.

Closing

The lessons we have learned during this twelve-year experience have been perhaps the most rewarding of our professional careers. We have truly felt like a total community of learners, and eagerly look forward to the next few years to see what new lessons we will be fortunate enough to discover.

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The Lektor system for the creation and reading of electronic books

José L. Rodríguez Illera
Universitat of Barcelona
jlrodrig@ariadna.d5.ub.es

'E-books ' have had a prominent position in the media over the last years, always tied to the possibility of partially substituting the reading in paper for the electronic reading. This topic has several possible approaches, in this presentation we will basically cover the possibilities and demonstration of a new system for the edition and reading of electronic books based on pedagogical approaches.

The current situation of electronic books.

The electronic books started as a new technological possibility, derived from the improvement provided by user's graphic interfaces, as well as of the new portable reading devices, always adding the advantages of the digital edition in the treatment of the text. However, it cannot be said that there is a standard system, as it is the case for the operative system in conventional computers. Although there are several types of programs that generate electronic books, there is only a few widespread. (but incompatible to each other):

Acrobat Ebook Reader (and its variants)
Microsoft Reader
Diverse propietary formats of the different portable devices.

One of the few standards proposed for the ebooks, the denominated Open Source, promotes that the text of the electronic books be in a variant of XML, although such a format is not compatible with Acrobat. Microsoft Reader has its own format and it can be used in platforms with Windows and Windows CE operating systems. The different devices (Rocket, Pocket, etc) use their own operating systems or Windows CE, incompatible with each other.

This situation is normal in an emergent market sector, thus the suppliers of electronic books opt for converting the originals into one or several of the alreay existing systems, offering two or three formats for the same title so that the readers choose the one suitable for their reading system. The use of electronic books, in the sense of 'ebooks ', is at the moment almost limited to novels, historical and literary works, although the use of electronic documents is widespread for any content type.

The electronic books have some important disadvantages. The main one is the scarce screen resolution. This is a problem that will be solved with screens offering more resolution, but this will not be immediate. Microsoft has created an improved antialising system, ClearType, that allows a better visualization of small size tipes fonts. Acrobat has also created its own system that uses a similar system to colour antialising and that shows very good results. Both systems will be incorporated in the operating systems, and improve the reading on screen.

The Lektor system

Lektor is a new system to create and read electronic books that started dedicated especially to the educational and training sector, and now covers the most general electronic edition. It emphasizes the reader's possibilities like a fundamental issue in the reading process, at the same time that makes it simple to the teachers the creation of electronic texts with instructive aims.

Its current position, shortly described, is as follows:

- It uses a basic and universal creation standard: files in format text (.txt), as well as Html with limitations.
- The creation of books is very easy: it is enough with specifying a text file, adding the data about the author, title, etc. and the program carries out the rest automatically.
- The books can be read in conventional computers (desktop, laptops) and in different operating systems: Windows 95,98,2000, Me, NT, Macintosh 8.5 and 9.x, and Linux and Macintosh X in the next version.
- The interface is multilingual, and the user can choose the language and change it in any moment. In version 1, Lektor supports the following languages: Catalan, English, Spanish, French and Portuguese.
- It offers advanced capacities of search: quick search of words and sentences, as well as complete indexing with chart of frequencies and contextual occurrences of each word.
- Lektor has a group of tools that the reader can use to work with the text: specific notepad for each book, possibility to mark the text with colors, hightlight reading pages, and write down commentaries.
- The author can decide to re-export the contents of books created with Lektor, so that the text is always recoverable.
- It allows inserting graphics or commented diagrams.
- Impression in text and graphic modes.
- The electronic books remain in the user's library, in their local hard disk. New books can be downloaded with any navigator and incorporated to the library.

Besides these general features, Lektor offers a series of facilities for the use of ebooks in schools and educational institutions, by means of a module, denominated Scola, that allows the teacher or the author to associate to the book questions of understanding and tasks related to the reading. Scola allows the student to write a comment on the reading document, as well as to send the professor its own questions or suggestions by means of a module that incorporates electronic mail.

Developing EFL collaborative and communicative writing skills on the Web: An evaluation strategy proposal

Janete Sander Costa , Universidade Federal do Rio Grande do Sul/CNPq, jtscosta@uol.com.br

Silvana Zardo Pacheco, Faculdades Integradas do Instituto Ritter dos Reis, silvana@portoweb.com.br

Dra. Cleci Maraschin, Universidade Federal do Rio Grande do Sul, clecimar@adufrgs.ufrgs.br

Porto Alegre, Brazil

Abstract: This paper reports a study, which aims at evaluating the development of written communicative competence of a group of college students in a Language Course in Brazil, majoring in English as a Foreign Language, during three academic semesters. Students have been utilizing EquiText, a collaborative writing tool on the Web, as a vehicle to improve their linguistic competence in text productions. This tool provides future teachers the opportunity to build a textual interaction on the Web as an alternative means for the face-to-face current practices. Texts written collectively provide the material for this evaluative analysis, which ultimately investigates whether the participants' communicative strategies represent significant indicators of their learning progress in this peer text construction.

Introduction

Digital technologies have been used in the education of future teachers of English as a Foreign Language (TEFL), opening new teaching fronts to Computer Assisted Language Learning (CALL), especially in the linguistic competence learning field. The Brazilian Ministry of Education and Culture (MEC) as well as private educational institutions encourage research in applied technology for collaborative work. Collaborative writing systems available on the Web have been created, such as Col·laboració, REDUCE, EquiText, WikiWiki Web, BSCW, which certainly can be utilized in TEFL programs to enhance learning language skills in response to growing demands for new digital resources as alternative means to teaching/learning conventional materials.

EquiText®[1], a Groupware tool that uses the Web as a word processor model, developed by a multidisciplinary team at the Post Graduate Program in Computer Science and Education at the Federal University of Rio Grande do Sul, according to socio-constructionists concepts, including Vygotsky's "zone of proximal development" (Rizzi et al., 2000a), allows any peer interactive written task in any language including EFL. Its layout favors the writing and rewriting of texts asynchronously by several remotely located people, allowing a constant text edition - during a limited time granted by the task mediator to the participants - in a friendly and accessible manner, displaying an immediate screen visualization of actions. EquiText educational applications have been carried out in Brazilian academic programs and findings presented in local, national and international events[2]. As a CSCL resource, it promotes collaborative learning supported by the Web tools, and open space for production and sharing of knowledge, also among EFL learners.(Chapelle 2001).

A pilot project utilizing EquiText to improve linguistic competence in future teachers of EFL has been developed at the Faculdades Integradas do Instituto Ritter dos Reis, Porto Alegre, Brazil, for three consecutive academic semesters. It aimed at analyzing mainly the process of writing in future teachers of EFL according to the communicative competence construct mentioned in Canale & Swain (1980) and Canale (1983), now in its preliminary evaluative stage. Written communicative competence of a group of 10 EFL voluntary students has been evaluated mostly from their interactions in the co-construction of the text entitled *Short Story* (second text), a negotiated and reflected result from their first experience with EquiText during the writing in collaboration of the *Collaborative Writing* text, specially created for their free use and learning of the tool. For analytical purposes just their interactions taken place in the second text - *Short Story* - will be considered. See Costa et al. (2001a,b) for further detail.

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[1] INPI: 0004139-2, in 11/22/2001. Websites: http://equitext.pgie.ufrgs.br and http://www.equitext.com

[2] Firstly presented at SITE/2000, San Diego, January; SITE/2001, Orlando, March, followed by ITTE, Swansea, UK, July 2001. Also presented in Cuba, 2000, and in Brazil in various events around the country.

The Study

The communication model used here for analyzing collaborative writing in Equitext and its possibilities of improving language skills, according to Canale & Swain (1980) and Canale (1983) concepts of communicative competence are based in three main communicative competences for the teaching of ESL: the grammatical, which registers the domain of the linguistic code, through the vocabulary, pronunciation rules, word formation and sentence structures (essential for students to reach higher proficiency level); the discursive and the sociolinguistic competence, which encompasses the capacity to combine ideas to reach cohesion in the form and coherence in the thought, and to use the grammatical forms adequately in several contexts, expressing the communicative functions in descriptions, in narratives, to persuade, to thank, to invite, etc.; and the strategic, especially used either in the proper process of communication or to express flaws in the knowledge of the code to negotiate meaning, recognized in paraphrases, aid requests from peers, etc. (Schlatter et al., 1998). It is emphasized that the written communication under analysis in Equitext is based on interpersonal interactions, in a sociocultural context, with inherent unpredictability, creativity, purpose, final result and authenticity of the language used. In this particular group, writing and rewriting by the 10 volunteer students in Equitext took place both synchronously (students met in the same Lab room and could interact face to face) as asynchronously (students contributed to the text in other moments, elsewhere). The students were attending various disciplines of EFL in a Language Course, and had different levels of language proficiency. They all worked for this project knowing that there were no evaluation implications involved.

During our study, we could easily find two of the communicative competences described in Canale & Swain: the grammatical and the socio-linguistic (here in conjunction with the discursive communicative competence) in its paragraph layout. The strategic competence, essential to compensate flaws in the communication, turned up less frequently in the *Short Story* than in the *Collaborative Writing* text, as a result of the students' discovering the free writing exercise and still counting with peer and teachers-mediators support, according to Costa et al. (2001a), as they negotiate the topic for the second text, *Short Story*, mentioned in Costa et al. (2001b). In fact, the tool itself makes the strategic competence possible because all contributions there are open to interference of any other participant: the strategic request for help is implicit throughout the task. Communication happens in spite of the limits imposed by the virtual environment, as human beings are flexible and adjustable. The final result or text production works as an integral part of the complex discursive process, where the written language used by the participants, independently of their linguistic competence level, is preceded by reflection and correction, is (re)organized logically in paragraphs, proper of the EquiText layout. Speakers/writers act more or less coordinately while elaborating the collective text, creating a new multi-territorial and multi-authorial space. The resulting cognitive processes can improve the students' fluidity in the use of their linguistic knowledge (Swain, 1998).

The set of paragraphs submitted during the text construction was a more or less communicative text. However, this evaluative study of the students' collaborations - based on the communicative competence approach - concentrates in the paragraphs stored in the "History" function and not in the final text production. Actually, the "History" function displays individual participations, corroborating to the whole text, i.e., a space that exposes to the user all the contributions made in the text in chronological order. For each contribution the accomplished action is indicated (inclusion, alteration, exclusion), its author, date and time the action was executed. The final product is collective, but it is in the function "History" that all the procedural register is stored, all individual contributions are displayed, revealing rich and peculiar meta-linguistic (Swain 1998), and meta-cognitive processes (Ridley 1997).

The students volunteering in this project were all taking different levels of EFL courses, were considered intermediate to low advanced proficient in EFL, according to the ACTFL Proficiency Guidelines (Hadley 1993, p.13). Their openness to learning with each other in a different means - without the evaluation ghost haunting their souls - perhaps made it simpler at first. Actually, *Collaborative Writing* text interactions were their first collaborative writing experience in text construction on the Web and that was possibly the reason why they seemed to be at ease in sharing ideas for co-constructing *Short Story*, their selected topic for the second text. EquiText became then an interesting and democratic environment, an opportunity for them to learn English and eventually teach, collaboratively. It motivated most of them to overcome difficulties, to take risks, to recognize their own mistakes and those of others and to correct them eventually, turning this activity into a dynamic and productive learning experience. This peer text construction generated solidarity and mutual responsibility (Ushioda, 1996) improving their EFL linguistic abilities, especially reading and writing.

Short Story collaborations (from November/2000 to July/2001mostly) represent the material for our preliminary evaluative analysis. An arbitrary evaluation scale has been created to measure all the collaborations

stored in the "History" function of *Short Story* text, in a scale of 0 to 10, varying from maximum (10), medium (7) and minimum (4), for all paragraph contributions: Insertion before or after, Alteration, and Exclusion, according to the EquiText functions shown in its menu of collaborations. Participations are computed according to the degree of relevance to the text development, according to the grammatical, sociolinguistic – discursive, and strategic communicative competence model. The grammatical and lexical inadequacies shall be considered if they modify the text course somehow, hindering its clarity, and receiving, in result, the corresponding degree.

Findings

This preliminary analysis of the data collected through the function "History" leads naturally to the idea that Equitext as a communications tool offers good resources in aiding to the reading and writing process in a text written in collaboration task. Illustrations 1 and 2, below, show the percentile of the participations by student as well as the three types of collaboration accomplished by those 10 students in the *Short Story*.

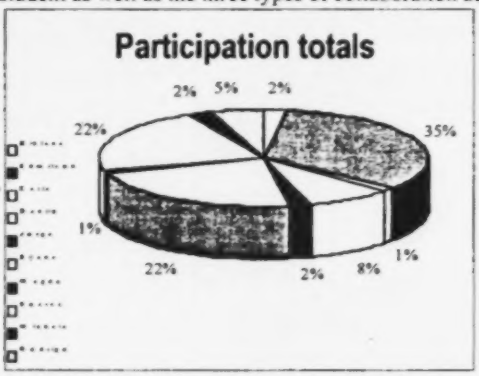

Figure 1: Total of participations per student and their respective percentile in the text construction.

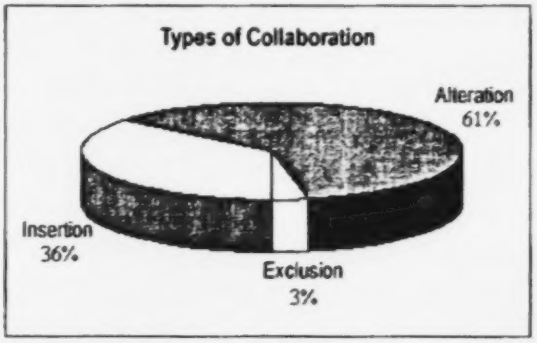

Figure 2: The three collaborations allowed by EquiText and their percentile in the *Short Story*.

Insertions of new paragraphs to the Short Story text were in smaller number than Alterations to the ideas already submitted. Students seemed to be either more involved with turning the text clearer or simply correcting grammar episodes. The Exclusion of paragraphs, with the intention of turning the sequence more fluent, coherent or logically connected, was very small, however significant. Female students accomplished more alterations than men, an interesting finding for a gender analysis. (See Figures 1, and 2). However, a contribution by Carla, for instance, that didn't modify the text in course and to which punctuation was not attributed (neither 7 nor 4), even having the contribution been registered in the function "History", a type of database of the text in process. Contributions like Carla's were not computed for they did not present significant value, neither to the textual movement, nor to the proposed analysis. We tried to maintain the analysis under the perspective of the quality and of the relevance of the contributions to the narrative, and considering the communicative competence, grammatical, sociolinguistic – discursive, and strategic, which actually revealed somehow the students linguistic improvement.

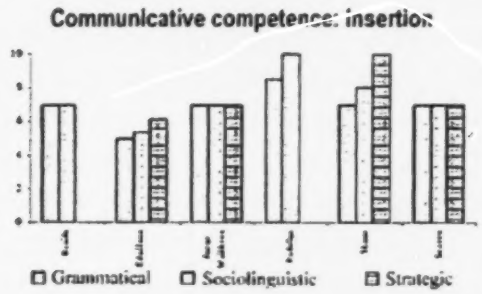

Figure 3: Demonstrative Graph of the three communicative competences in the Insertion function by student.

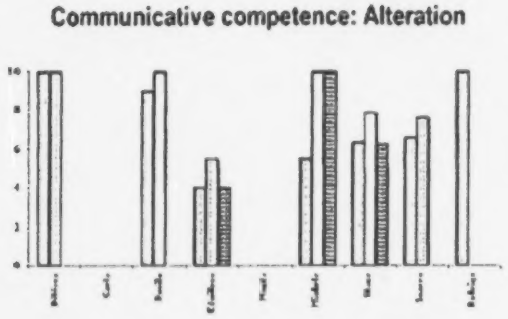

Figure 4: Demonstrative Graph of the communicative competence in the Alteration function by student.

Figures 3 and 4 above present two graphs built from data raised out of the *Short Story* "History" storage functions: the Insertions, Alterations and Exclusion listed in the collaborations menu came from the 10 students *Short Story* production, arbitrarily valued as 10, 7 and 4, though qualitatively attributed. They show the total of participations and their authorship, as well as the nature of their collaborations. Also, they bring referring data to the nature of the insertion and the corresponding communicative competence, as well as their degree of relevance to the textual weaving. Therefore, they reveal the importance of the participation to the process of the text construction. In addition, results show that Alterations (Fig. 3) and Insertions (Fig. 4) largely surpass Exclusions and that grammatical and sociolinguistic – discursive competence were close in intensity, either in their frequency as in the text alteration. The strategic competence due to its interactional and more dialogic nature was apparently less present in the *Short Story* than in the first text *Collaborative Writing*, where students had to negotiate for topic and learn to handle the tool, having therefore to ask for help – a clear case of a strategic communicative competence. On the other hand, EquiText itself potentializes this kind of competence in virtue of its design: it could be implicit in the participants' minds and actions while being receptive to any alteration in their paragraphs. At this very moment, each paragraph author also uses insertion strategies from the others in their own texts. There's a permanent linguistic feedback on the Web and those participants later reported that their experience in Equitext while writing texts in EFL collaboratively contributed considerably to their easiness with the language and with the learning processes there involved, an important gain in their education: "we think that collaborative writing is very important to English students because we can change ideas and work together." (Danilo/Jô, in 11/22/01).

Conclusions

The unprecedented diffusion of the Internet resources, the urge for friendlier and easier educational software to aid to current classroom didactics, in addition to the ever growing challenges that (future) teachers of EFL are facing today in their educational formation, necessarily forces us to a reevaluation of the paradigms towards the teaching of foreign languages, especially English, in Brazil in view of its being the current lingua franca. Sustained basically by the theoretical foundations of Canale & Swain's communicative competence model we feel confident to suggest that the communicative competences found in the text construction of the 10 EFL students analyzed in this pilot project have somehow developed if not improved considerably while writing collaboratively in Equitext during the three academic semesters studied. We agree with Hirvela (1999) that writing collaboratively [in Equitext] will not solve all the problems, nor will it work for all the students, in the same way as any other teaching approach. However, producing a text collaboratively may create significant opportunities for the practice of other linguistic abilities: participants of a group that carry out a task [e.g. in Equitext] negotiate meaning while constructing their text. As a result, they develop group attitudes, which sustain more affective and consequently more effective language learning strategies. Positive peer interactions mediated by a constructive teacher can create high levels of motivation and promote more constructive learning. And this has been verified throughout our students' collaborative text construction, in both *Collaborative Writing* and *Short Story* texts. Thus, the interactions through the Web studied in Equitext produce a group articulation with meta-cognitive peculiarities that retroact and enhance the analyzed communicative competences.

Finally, we believe that other EFL teaching strategies in conjunction with the digital technology available on the Web may generally improve Brazilian learning levels. Thus, Brazilian students' communicative competence in EFL can improve by EquiText environment layout as it facilitates the construction of communicative strategies in collaboration with other peers in order to produce shared knowledge while the text writing movements takes place. Moreover, the construction of a collective that enhances EFL writing skills among (future) teachers in Brazil is possible and provides their users with other more autonomous, reflective

and co-responsible means of teaching. EquiText proved a helpful group knowledge construction tool, with considerable benefit to the education of Brazilian teachers.

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Write to Learn with Journal Zone

Peter Skillen, Educational Consultant, peter@peterskillen.org

Abstract: Journal Zone is an online 'journal' that supports reflective learning within a social context. It is a classroom tool that integrates three common practices of exemplary teaching – journal writing, collaboration, and cognitive scaffolding. These encourage students to think more deeply, not only about the task at hand, but also about their own thinking and learning processes. Journal Zone is designed to support and encourage the development of both expertise in learners and of 'collaborative knowledge building' communities (Salomon et al, 1991; Bereiter et al, 1992; Scardamalia et al, 1994). How can novice learners become more like expert learners? What role do journal writing, collaboration, and scaffolding play in the development of learning?

Novice versus Expert Learners

'Intentional' or 'mindful' learners are learning to become expert at *becoming expert* (Scardamalia et al, 1983). They are learning not only subject matter and skills, but are acquiring valuable metacognitive knowledge as well. Current pedagogical models acknowledge that 'learning to learn' is central to education (Perkins, D.N., 1995). Journal Zone is designed to help novice learners acquire many expert strategies and behaviors through their purposeful engagement with peers and with the support of the scaffolding features.

Journal Writing

A Place to Think

The very presence of a journal acts as a tool that predisposes people to think – to plan, monitor, and reflect. This helps overcome the difficulties of not even thinking about performing these tasks. Sometimes it is not that the student doesn't know how to plan, it just does not come to mind to do so. The journal, therefore, reminds students to think and gives them the opportunity.

Thinking About Thinking

Journal writing allows for the externalization of knowledge through language. Language plays an important role in making knowledge explicit by objectifying experience. So as students engage in writing about their knowledge they are indeed exploring, stating and questioning what they know (Britton, J., 1970).

Understanding Subject Matter Through Writing

Writing has been widely accepted by educators and researchers as a significant means of learning subject matter more effectively. Countryman (1992) says, "Knowing mathematics is doing mathematics. We need to create situations where students can be active, creative, and responsive to the physical world. I believe that to learn mathematics, students must construct it for themselves. They can only do that by exploring, justifying, representing, discussing, using, describing, investigating, predicting - in short by being active in the world. Writing is an ideal activity for such processes."

Journal writing, as a form of writing and 'thinking out loud,' seems to assist in initiating, supporting and encouraging intentional learning. What role might collaboration, cognitive pro mpts and computers have in designing an effective journal writing environment?

Collaboration

Central to knowledge construction is the recognition that learning is a social process. Social interactions allow for concepts, vocabulary and processes to be made explicit. Learning has been said to be "less as the socially-facilitated acquisition of knowledge and skill and more as a matter of participation in a social process of knowledge construction" (Greeno, J.G., 1997).

Journal writing, usually a personal event, may also be more public or collaborative. This collaborative form of journal writing leads to unique experiences that have qualitatively different results than individual journal writing. Students not only reflect on their own thoughts and processes, but also exchange information about both the subject content and the processes and strategies used by others. This leads to more comprehensive knowledge building and results in both better reports and increased metacognitive skills.

Journal and Elaboration Prompts

Both journal writing and collaboration offer opportunities for students to think deeply about their tasks. Specifically, students may engage in a great number of thoughts related to planning, monitoring and reflecting. But, they also may not. Prompts, questions or sentence starters may provide the necessary scaffolding for this to occur.

Journal starters encourage the change of normally covert procedures into ones that are overt. They help students to consider one's own higher level strategies and they promote the active decontextualization of knowledge. They may allow the user to decenter from personal thoughts and think about other considerations. They facilitate an internal dialog when no other partner exists to 'bounce ideas off'.

Summary

Journal Zone is an online tool for reflective collaboration. Journal writing, collaboration, and scaffolding support and encourage the development of students' expertise in learning.

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Literacy Junction: Exploring Adolescent Identity and Social Agency on the Web

Hiller A. Spires
Department of Curriculum & Instruction
North Carolina State University
United States
Hiller_spires@ncsu.edu

Pru Cuper
Department of Curriculum & Instruction
North Carolina State University
United States
Pruinnc@aol.com

Abstract: This paper describes *Literacy Junction*, an interactive web site for middle school teachers and students. Using an interdisciplinary approach to learning, *Literacy Junction* offers three unique features: technology-enhanced experiences with outstanding young adult literature, a virtual middle school environment replete with student-created cybercharacters and cybermodels, opportunities for critical analysis of contemporary social issues. Our ongoing research suggests the motivational value of an interactive, literary cybercommunity to support high reader/text engagement. Through their membership in this unique online community, students are challenged to develop a sense of their own social agency.

Literacy Junction, (http://www.ncsu.edu/literacyjunction) an interactive web site for middle school students and their teachers, takes a unique approach to connecting young adult literature to young adult audiences. Recent research suggests that adolescents are spending more time reading on the web and less time reading traditional print-based texts. Rather than attempting to reverse this natural adolescent learning trend, we are capitalizing on it by providing technology-enhanced learning opportunities to accompany young adult literature. *Literacy Junction* offers features that both peak the interest of adolescents and simultaneously augment the need for rigorous and engaging reading experiences in middle school. In order to accommodate the needs of both teachers and students, *Literacy Junction* includes the following features:

- Teacher-generated lessons tied to the NC Standard Course of Study
- Technology tutorials for teachers and students
- Publication of student-generated work
- Community of cyberpeers who model academic products
- Student-created cybercharacters
- Critical analysis of contemporary social issues

By offering the opportunity for both face-to-face and virtual meetings, this networked professional community provides the mentoring and continued support that teachers need to initiate and sustain new

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teaching practices. Additionally, *Literacy Junction* offers unique opportunities for students to creatively express themselves as they grapple with contemporary social issues that are prompted from young adult literature.

As we designed *Literacy Junction*, we kept one basic premise regarding adolescents in mind — "for middle schoolers, school is primarily a place for making friends . . . and figuring out just who you are. Somewhere after all of that, it's also a place for learning" (Beers, 1998). The three conceptual tiers underlying *Literacy Junction* take full advantage of this well-established understanding of what engages and motivates adolescents. First, there is Cyber Heights Middle School (CHMS), *Literacy Junction's* virtual learning center. CHMS cybercharacters typify the idiosyncrasies of real world adolescents and teachers. These "virtual" characters serve as our cybermodels, demonstrating academic approaches to the literature-related activities offered at *Literacy Junction*. After getting to know the resident cybercharacters, our "actual" (or *real world*) student visitors are then invited to create their own cybercharacters to attend CHMS. These student-created characters, who form our second tier, immediately become part of the cybercommunity and are invited to participate in online learning opportunities through the genius of the students who created them. A third and final tier of the site is comprised of our "fictional" CHMS characters, who include the many protagonists from the books featured on *Literacy Junction*.

After getting acquainted with and creating cybercharacters, *Literacy Junction's* student visitors "go to class" at CHMS in what might be best described as the *Literacy Junction Impact Zone* (Fig. 1). In this theoretical zone, actual, fictional, and virtual worlds converge as students grapple with contemporary social issues signaled from young adult literature. Through their own perspectives, as well as the unlimited perspectives of the cybercharacters they create, students negotiate their evolving identities and embrace their emerging roles as socially responsible citizens. Within the *Literacy Junction Impact Zone*, students experience unique learning opportunities that potentially include: text immersion and critical web consumerism; intellectual rigor and creative expression; perspective-taking and identity negotiation; personal efficacy and social responsibility.

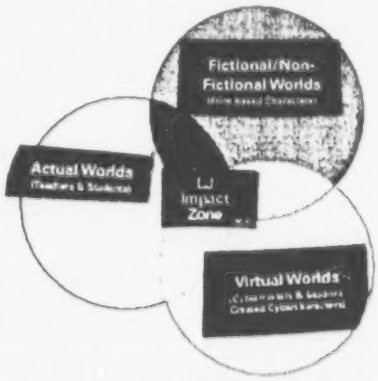

Figure 1. Literacy Junction Impact Zone

Over time, we expect *Literacy Junction* to help teachers integrate technology, to increase students' capacities to use technology as a learning tool, and to enhance students' academic and personal growth as they develop a sense of their own social agency. By using young adult literature as an elemental and engaging platform, Literacy Junction provides an appealing technology-enhanced environment for adolescent cognitive and social development.

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Assessing the Process and Efficacy of Moving Literacy Education Classes Online

Matt Thomas, Ph.D.
Assistant Professor of Literacy Education
Department of Curriculum & Instruction
Central Missouri State University
United States
mthomas@cmsu1.cmsu.edu

Abstract: This paper reports on successful efforts to bring a teacher education course in content area literacy into an online-only environment. It delineates the research-based planning of the course development, course efficacy relative to other forms of delivery, and some of the implementation challenges. The course planning was based on an emerging collection of best-practices in online instruction coupled with the embedding of new online versions of best-practices in traditional content area literacy instruction. Course efficacy is evaluated by comparing quantitative data and anecdotal information from the online course with the same course taught in hybrid and traditional formats. Simple conclusions are drawn in order to advance current understandings of the process and efficacy of moving literacy education classes online.

Introduction

In summer, 2001, the researcher was awarded an online course development grant for $9,000. The purpose of the grant was to move a teacher education course, taught previously by the researcher in both traditional and hybrid formats, into a completely on-line course. This was done by utilizing BlackBoard course delivery software, subscribed to by the researcher's university. The course title was "Teaching Reading in the Secondary School" and is taken for undergraduate or graduate credit. The main content of the course is targeted toward helping pre-service and in-service teachers acquire understandings of student literacy development and teaching methods for best helping their students to learn from their many content area reading, writing, and thinking assignments.

Research-Based Course Development

The backbone of the course structure was a series of thirteen Learning Modules built, by the researcher, around the course text, a content area literacy textbook by Manzo, Manzo, and Estes (2001). Each Learning Module was a Microsoft Word document that the students downloaded and on which they completed the work assigned within the Learning Module. The Learning Modules were designed around a synthesis of best-practices research regarding both traditional literacy pedagogy and online course delivery (c.f. Manzo, Manzo, & Estes, 2001; Thomas & Grigsby, 2001; Dwyer, Sunal, Geisen, Sunal, & Trundle, 2001; Thomas & Hofmeister, in press). Each Learning Module contained the following distinctives: an agenda and task list; a lecture essay to introduce the material; a chapter of the text to be read; a set of Microsoft PowerPoint notes over the chapter; an application activity utilizing journal writing and online discussion board interactions or small group collaborations; three levels of "reading the lines" (reading the lines, between the lines, and beyond the lines, or activities that required reading comprehension, inferencing, and higher-order literacy); transmission, transaction, and transformational models of instruction/learning; three different types of structured interactions (student/text, student/student, and student/teacher); a carry-out thought or quotation; and a checklist to ensure all of the Learning Module tasks and activities were completed. Additionally, in the chapters of the text a selection of content area reading strategies were presented. In subsequent Learning Modules then, key teaching strategies, modified for an online/Learning Module environment were employed as the main strategies used within the Learning Modules themselves. Content area reading/literacy methods or strategies embedded in the Learning Modules included: Listen-Read-Discuss (Manzo & Casale, 1985); Three-Phase Graphic Organizer (Manzo,

Manzo, & Estes, 2001); reiterative reading (Crafton, 1983); KWL-Plus (Carr & Ogle, 1987); Comprehension Monitoring System (Smith & Dauer, 1984); and elements of the interactive teaching cycle (Manzo, Manzo, & Estes, 2001). Finally, in addition to completing the tasks associated with each Learning Module, the students wrote a comprehensive modified Directed Reading-Thinking Activity (Stauffer, 1969) using online text for the assigned reading, wrote a detailed review of one chapter of the text, and compiled a comprehensive course notebook.

Efficacy of Online Course, Implementation Challenges, and Conclusions

Since the summer of 2001, approximately 75 students have completed the online course. Quantitatively, according to test scores, assignment grades, course grades, and course evaluations, the online course compares equitably to the traditional and hybrid format offerings of the same course taught by the researcher. Anecdotally, based on reflections in their course notebooks, discussion board interactions, and e-mail conversations, students learn a good deal, read their texts more carefully, think critically about the course topics, and find the course to be valuable. However, while some students seem pleased with the flexibility afforded by the asynchronous course delivery, others express that they miss the face-to-face interactions of a traditional course. The primary practical implementation challenges faced by the researcher have included: the time-consuming nature of Learning Module creation and monitoring and participating in many discussion board threads; helping students with needed technology skills; and managing a very great increase in the number of e-mails from students. Future course upgrade goals include adding video streaming, developing more small group collaboration activities, and developing a web-based environment for housing student work for future use by themselves and by colleagues.

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Knowledge Building Technology and Literacy Learning in Canada's North

Elizabeth Tumblin
Department of Education
Prince Edward Island
Canada
ejtumblin@gov.pe.ca

Heather Hemming
School of Education
Acadia University
Canada
heather.hemming@acadiau.ca

Abstract: With the arrival of technology's presence within classrooms around the world, the responsibilities of the teacher quickly become redefined. Technology itself cannot automatically provide learners with an enhanced education; thus, teachers are encouraged to critically examine how technology is used in their classrooms. It is essential for teachers to actively question issues surrounding technology's ability to support constructivist teaching and learning approaches. This paper will offer a discussion around the successful implementation of an electronic learning environment, supported by CSILE/Knowledge Forum®, in a Northern Canadian classroom and educators' views on the impact on literacy learning.

Introduction

Using computer based technology to support literacy learning has been embraced enthusiastically by some, outwardly rejected by others and examined cautiously by many. What remains a concern is how to ensure that the computer is used in a pedagogically sound way to support learners as they use language in functional ways to construct meaning. One of the challenges for educators is making computer learning experiences culturally relevant while supporting literacy development. This paper examines educators' perspectives on the challenges and possibilities for literacy development created when CSILE/ Knowledge Forum ® (Scardamalia, Bereiter, McLean, Swallow and Woodruff, 1987) software was used by educators in Iqaluit, an isolated, Northern Canadian community of approximately 6000 people where 85 % of the students are Inuit.

Theoretically, the learning process embedded in the CSILE/ Knowledge Forum ® learning environment should support the creation of a learning environment which parallels that advocated by leading literacy educators. For example the software is created in a manner that learners read and explore content which is self-selected, use existing background knowledge as a base for learning, are in control of their learning, use language in meaningful ways to build knowledge and solve problems. The role of the teacher is one of facilitator. The infrastructure of the software makes explicit some thinking strategies. Participants explore specific areas of interest under the umbrella topics introduced, choose one of several scaffolds to frame their discourse, such as the process of devising a problem, developing theories, posing additional questions, planning, researching new information from a variety of sources, representing new learning through text and graphics, devising a better theory, etc. or through focused discussion topics. Topics are tailored to meet specific local curricula and interests/needs of the students as each site starts with an empty database on their server. In Iqaluit, topics have ranged from Marine Environment to Indigenous People of the World, from Weather and Space to Northern History, Geography and Resources, with special interest areas such as Suicide and Racism explored in between. Users contribute to the database on client

computers to construct knowledge as a community, allowing for continual modification, building on each other's ideas, constructing knowledge, whether individually or in groups. Using the technology of Knowledge Forum® to build knowledge that is culturally relevant while promoting a world-view has the potential of being motivating for young Inuit children. Such software could enable students to start with what they know, and from where they are in their language development in their first and second languages, thereby enabling a comfort level with learning and technology that is not readily available in most commercialized resources for Northern youth.

The Study

This research project focused on analysing perspectives of educators regarding the relationship between the knowledge building technology of Knowledge Forum® and literacy development for Inuit students. Data was collected through interviews, observation and examination of the data base.

The choice of a qualitative framework was adopted primarily due to the emphasis on social context. Since qualitative research is "rich in description of people, places and conversations" (Bogdan & Biklen, 1992, p.2) means that the context formed an integral part of the research.

Five major informants were selected using purposive sampling: 1) a bilingual Inuk first grade teacher whose students are taught totally in Inuktitut, 2) a consultant who was responsible for bringing the software to Baffin, 3) a veteran northern teacher, 4) a bilingual Inuk third/fourth grade teacher, and 5) a fourth grade English First Language teacher.

Findings

According to all the informants, all the questioning, theorizing, researching, dialoguing integral to the used of Knowledge Forum technology encouraged students and teachers to engage in literacy learning which was meaning focussed. In the classroom these processes were not something practiced but were a natural part of the literacy learning. Further, the creation of various forms of texts which requiring thoughtful question posing, reflection on the need to communicate with an audience, clarifying an ideas and editing were all viewed as authentic literacy events. The fact that the software was viewed to be driven by process, and that content focus was developed by participants, was thought to create a literacy learning framework that supports cultural relevancy. As the informants identified, rather than the teacher controlling the evolution of content exploration students had an opportunity to have control over identifying content that had personal relevance. Further, given the flexible nature of the software students were able to engage in knowledge building communities at a variety of developmental levels. Consequently, the diverse range of literacy levels within classes were thought to be accommodated.

Knowledge Forum® technology offers an electronic medium for literacy learning which educators involved in this study suggest can create a meaningful context for literacy learning. In classrooms, teachers are challenged to create literacy learning curricula which are meaning-centred, emphasize process, allow student control, support a variety of learning levels, and embrace cultural relevancy. In northern communities where English is frequently not the first language the challenge of creating a curriculum, which is relevant and builds on the existing language base of the students was viewed as challenging. The experiences of the informants in this study suggest that using knowledge-building technology in Iqaluit, a Northern Canadian community provided a curricular structure which in their views supported meaningful literacy learning and pedagogically sound teaching.

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A GREAT INSPIRATION

Kathy L. Adams
Educational Leadership Department
Wright State University
United States of America
Kathy.adams@wright.edu

Marguerite Veres
Educational Leadership Department
Wright State University
United States of America
marguerite.veres@wright.edu

Abstract. There are thousands of software applications available to educators, but one application in particular is an essential tool for teaching and learning. It is a graphic organizer program called *Inspiration*. *Inspiration* is a program that can be used by teachers and students to organize ideas graphically or textually. Advanced features of the application allow for linking both to the Internet and other documents thus demonstrating the relationship of ideas and concepts.

In these days of national standards there is a tremendous need for on-going training among pre-service and practicing teachers in the use of technology. Students are entering pre-school having utilized technology more than many of the educators that they will encounter. There are thousands of software applications available to educators, but one application in particular is an essential tool for teaching and learning. It is a graphic organizer program called *Inspiration*. *Inspiration* is published by Inspiration *Software, Inc.* and allows for the organization of ideas either graphically or textually. It is user friendly, stimulating, and easily adopted by both students and teachers. Advanced features of the application allow for linking both to the Internet and other documents thus demonstrating the relationship of ideas and concepts.

Research is clear that graphic organizers assist greatly in improving instruction, increasing reading comprehension and improving creative writing. (Culbert et al. 1998; Bowman et al. 1998; Meyer 1995; Quist 1995). In addition, graphic organizers assist with conceptual understanding, higher-level thinking and retrieval of information (Monroe 1997). Most importantly, *Inspiration's* ease of use assures that it does not interfere with the creative process or the sometimes frustrating use of technology.

Inspiration software allows teachers to turn complex thoughts into meaningful displays whether pictorially, in text, or back and forth between the two. Brainstorming, concept mapping, and diagramming in all subject areas are essential to inspire creative thinking. Educators utilizing this program can easily survey a class and then demonstrate the similarities and differences among the concepts. A class of primary students could quickly contribute verbally about a variety of topics and instantly see a graphic representation of their session. The idea of classifying pets, foods, or games could turn into a meaningful beginning for young minds to see relationships within the group. The teacher could then provide links for concepts either to the Internet or other similar documents. This would provide a springboard for writing or reporting within the classroom. Furthermore, this visual graphic helps to retain knowledge. It also helps to connect prior knowledge to new knowledge in a meaningful way, supports different kinds of thinking and can assist with formative assessment. *Inspiration* has a brainstorming rapid-fire feature that allows thoughts to flow quickly. There is no longer a need for messy boards and copying because Inspiration has made the connections and display. The organizer can then be printed out and copies run for all participants. *Inspiration* can also be used by the teacher for his or her own writing. Lastly, the modeling of the creative process for students can be powerful.

The *Inspiration* program can help students with the development of concepts, demonstrating and understanding sequencing or chain of events, cycles, cause and effect, problem solving, comparing and contrasting, analysis, classifying, finding main ideas and part to whole learning. In addition, the program can be very motivating for reluctant writers. Besides the students having a copy of the organizer to study for a test, the actual process the student goes through with *Inspiration* can demonstrate and be used for

alternate assessment purposes. For example, if the students make visual representations of what they know the teacher can then quickly check for this understanding.

Inspiration can be used by teachers and students alike. It is a fun, easy and motivating program to use. Best of all, it allows for the integration of technology and contributes to learning in many ways.

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Children's Literacy Initiative's Message Time™ CD-ROM

Alicia Wilson, Children's Literacy Initiative, US

Children's Literacy Initiative (CLI) is a non-profit organization dedicated to ensuring that children living in high-poverty areas have the best possible opportunity to become successful at reading. Children's Literacy Initiative's goal is to prevent the need for remediation by helping children who are perceived to be educationally "at risk" achieve at national norms on literacy assessments. CLI's programs address many of the causes of reading difficulties in the early grades, which very often lead to continued school failure, and ultimately to economic disadvantages. CLI has served public school and Head Start teachers nationally, with a focus on the eastern states. Large-scale projects include Baltimore City Public Schools, the Philadelphia School District, Newark Public Schools, and the Camden Board of Education, with other projects in Los Angeles, New York City, Washington D.C., and Pittsburgh. Through years of work in entire school districts and with the community of teachers within individual schools, CLI has established itself as an effective professional development model.

CLI's approach is to provide primary teachers (pre-Kindergarten through 3rd grade) with intensive training in proven literacy instruction practices. CLI coaches, mostly teachers themselves, work with new and veteran teachers in their classrooms assisting them to the level of mastery in these practices. Moreover, essential to CLI's working with teachers in low-income, under-resourced areas, is its commitment to setting up individual classroom libraries, as well as home lending libraries, and provides other literacy supplies such as individual student writing boxes equipped with a myriad of fun and essential writing tools.

As CLI develops and addresses new demands in primary education for the 21st century, its mission is expanding to reach an ever growing population of new teachers who are replacing the thousands heading for retirement. With the hopes to train larger numbers of teachers in effective instructional strategies, CLI has adapted the use of CD-ROM technology to its program. As an alternative to its intensive training component, CLI will be providing shorter training sessions on one of its instructional strategies and supplying teachers with a CD-ROM to give them a thorough demonstration of an effective method in teaching writing skills. By taking advantage of the multimedia format, teachers will be able to view multiple video, audio and graphical samples that will provide them essential supportive illustrations and information.

By using CD-ROM technology, CLI has reformatted one of its central training models, namely, the use of video demonstrations and text support into a more dynamic and interactive medium giving teachers opportunities for multiple viewings and personalized engagements. CLI plans to use this format as a supplemental as well as an alternative training program offered to schools throughout the country and to those not able to purchase the entire CLI training package.

CLI hired twentyonexdesign (http://www.21xdesign.com) to develop a CD-ROM that would demonstrate the step by step procedure for conducting a daily writing lesson called Message Time ™. Developed by Dr. Janice Stewart of Caldwell College in New Jersey, Message Time ™ is a basic instructional approach which explicitly models the writing process to primary students learning the initial skills in literacy. Message Time™ is not a direct-instruction approach, nor is it a script for teachers to follow. Rather, it is a simple approach to writing which allows early learners to first comprehend that writing is a process of communication. Message Time ™ increases children's knowledge of print conventions such as differentiating between words and letters and punctuation. It also acquaints children with written language in a meaningful context and provides opportunities for children to respond at their own level of reading and writing comprehension.

The SITE conference offers CLI an optimal platform to launch a debut of its CD-ROM to the education community and interact with colleagues who have also developed technology-based educational formats. CLI is interested in demonstrating its CD-ROM to educators who can use it as well as to those who can offer critiques and suggestions of its use. During a two hour poster session, CLI will offer demonstrations of it software, displays of images from the CD-ROM and pamphlets about the product and about the CLI program in general. A raffle of free CD-ROMs will also be offered during this time.

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The Q-folio in Action: Technology Integration in Inquiry-Based Language Learning

Carl Young, Virginia Tech, US

Abstract:

Presenter will share an approach to re-inventing the pen and paper portfolio and the traditional research project with the Q-folio, a web-based electronic portfolio designed for language pedagogy courses taught at the University of Virginia and Virginia Tech.

The "Q-folio" courseware tool was originally designed for use in portfolio-based writing instruction. The principals employed in that design include: (1) a web-based platform for communication; (2) a "user-centered" approach in which users of the tool are invited to participate in the design of the interface; and (3) "day one productivity," meaning the tool should require a minimum of training before it can be used productively. The Q-folio acted as a robust document management system both for delivering content to the students as well as archiving drafts of their work. The system also allowed them to build multimedia files with full HTML capabilities for presentations. The tool was built in a web-database environment using Cold Fusion, allowing administrators to develop the tool rapidly and make changes easily. Cold Fusion's close adherence to HTML standards and its relatively straightforward commands for manipulating databases were found to be effective for instructors with little knowledge of programming.

In supporting the Heuristic Quest research project in "Language, Literacy, and Culture," the Qfolio provides students the opportunity to develop their own research agenda and to use inquiry to teach themselves and their classmates in an authentic research process. Using hypertext, interlinks across heuristics, and web links, students create a sophisticated road map of inquiry into the nature of language and effective language instruction. They document their process and their findings, which are being archived for future students and eventually for public access. Although customized for this course, the Q-folio is being used in other courses at the University of Virginia as well as Virginia Tech. Ultimately, the tool can be used to support any content area and grade level where teachers want to enhance and integrate the research, writing, language, and conversational practices of their students.

Comments:

The evaluation study informing this presentation was conducted on the electronic portfolio mentioned and examined students' experience of the tool to support both their research processes and products. This study sought to address the need for information regarding: 1) how preparing teachers perceive the technology they are being asked to use; 2) the extent to which electronic portfolios enhanced content learning for these students; 3) how students might collaborate with instructors and technicians on the design of the technology intended to support their work; and 4) how experiences of technology in teacher education affects student plans for integrating technology in subsequent learning environments.

The data (from surveys, interviews, lab and classroom observations) derive from a course focused on language, literacy and culture, wherein the subjects used the specific electronic portfolio tool to further a research question of their own choosing related to language pedagogy in the English classroom. The case study method and analytic induction were used to arrive at the findings regarding students' perception of the tool and associated tasks, the impact upon content learning, the potential for collaboration on instructional design, and the impact upon student technology use. Findings were used to revise the course and refine the tool for this course as well as additional course settings.

I had difficulty in deciding on a presentation category. The presentation would include a talk integrated with a demonstration of the tool and some of the student work archived there. I am open to suggestions for altering the presentation category should this be a concern.

Possible co-presenters may include Margo A. Figgins, Associate Prof. of English Education at the University of Virginia, and Yitna Firdyiwek, Faculty Instructional Technology Advisor at the University of Virginia.

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